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## Original Communications.

### *MONOMANIA.*

*A Clinical Lecture, delivered at the Philadelphia Hospital.*

By H. C. Wood, M.D., LL.D.*

[Reported by William H. Morrison, M.D.]

GENTLEMEN,—The subject of to-day's lecture is monomania. This term literally means one mania. It was originally proposed by the great alienist Esquirol, who employed it to signify a condition of exaltation in which the patient was in a perpetual and chronic state of high spirits, with excessive mental and emotional activity. If the term monomania were used with this meaning we should include under it cases which really belonged to chronic mania in its mildest type. We should also find that those cases which might be included under monomania would sometimes pass from this condition of excitement to one of depression. The term has been used by different alienists with almost every conceivable meaning. In these lectures I shall use it to cover a very large class of chronic insanities in which the insane condition is limited, at least in its marked manifestations, to certain portions of the

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brain-functions. The term monomania, thus limited, covers those cases which are commonly termed cases of partial insanity, in which one function of the mind is either almost solely or most markedly affected. The best scientific definition of monomania that I know of is that given by Spitzka. He says, "Monomania is a chronic form of insanity, based on an acquired or transmitted neuro-degenerative taint, and manifesting itself in anomalies of the conceptional sphere,—*i.e.*, the sphere of thought,—which, while it does not destroy entirely the mental mechanism, dominates it." This definition is, I think, scarcely wide enough. I believe that the term monomania should include not only those cases in which the intellectual or conceptional sphere is involved, but also those in which the emotional condition is affected. There are, as you know, certain passions, such as avarice, envy, vanity, and so on, which are really as much cerebral functions as is the reasoning power itself. There are cases in which these emotions become so magnified in their power that they dominate the whole individual. As an example may be taken the miser, in whom that portion of the brain whose functional activity is connected with avarice has become so excessively active that it subjugates entirely the ego. An old gentleman who resided in this State in early life had thoroughly well educated and taken care of his family. His wife died, and he then became more and more queer and more and more poverty-stricken, so that he scarcely provided his daughters with the necessities of life. He was taken care of by an old colored woman, whom he had bought for very little. His children were clad in the coarsest clothing, and, as I have said, scarcely received sufficient food. The old man eventually died, and fifteen thousand dollars in gold was found under his pillow. Every day he had crawled out of bed early in the morning and hid this bag of gold in a certain part of the room, and after the bed had been made would crawl back and put it under the pillow. Securities were also found amounting to hundreds of thousands of dollars. Avarice had become so overweening that it was beyond the power of the patient to control it. It is perfectly parallel to the appetite which is engendered for strong drink. The man first drinks through the will; but there frequently does develop a condition of the nervous system in which the power of the brain is so lowered and influenced by the long-continued habit that the man is a monomaniac as regards drink. The thirst for alcohol absolutely dominates him, and is entirely beyond his power to control. It is, of course, a very difficult matter,—and it may be in individual cases impossible,—for us to draw the line between sanity and insanity,—*i.e.*, between the condition in which the patient could, if he would, control the appetite, and that in which the power of self-control is really lost; but assuredly the difficulty of drawing the line ought not to cause us to reject these cases of emotional disorder as belonging with the insanities. Did we not at our last lecture on melancholia learn that a general depression of spirits may be for a time the sole evidence of an insanity? And if what may be considered a generalized emotional disturbance marks general insanity, surely a particularized emotional disturbance, such as exists in the miser, may mark particularized insanity,—*i.e.*, monomania.

The difficulty of decision exists in all forms of monomania. Let me cite you a case from my experience.

Several years ago I was called to a palatial mansion, and I was met in a boudoir by a handsome young wife, quiet, perfectly lady-like, and self-restrained in her manner. She said to me, "Doctor, I have sent for you under very painful circumstances, because I feel that I must confide in some one." She then went on to say that she had syphilis, and that this had been given to her by her husband, and that she had had a child born in a certain watering-place, and that it had died from hereditary syphilis. She further told me in detail of having personally detected her husband's infidelities. I examined the woman thoroughly, but could not find the slightest evidence of specific disease. I finally wrote to the physician who had attended the woman at the birth of the child. He at once replied that the child was well formed and perfect, and that it had died from an ordinary acute infantile disease. I then assured the woman that she had not had syphilis. She expressed herself as much relieved, but was unrelenting towards her husband, who she said kept a mistress, and frequently annoyed her by communicating with said mistress at places of amusement where they were together, and by having said mistress to drive immediately behind them in the park. She had detectives employed to watch her husband, and had a well-known lawyer engaged to superintend the detectives. After this had gone on for some weeks, I began to suspect that there was something wrong with the woman's brain, and to watch her.

To make a long story short, my patient watched her husband more and more closely, spent hundreds of dollars, and at last one night at a theatre pointed out as the paramour of her husband a lady who was well known and entirely beyond suspicion. The whole of her story was undoubtedly invented, although she herself believed it. Her husband, however, believed that she was full of the devil and wanted to torment him. She was all the time acting against her own interest. She could have obtained anything from her husband if she had acted in a decent manner towards him. There was nothing to be done in the case. The couple were sent to Europe, but the same condition remained, and they finally separated. This was undoubtedly a case of well-formed monomania, in which the woman's intellectual powers, except in this regard, were perfect. She mingled in society, reasoned well, and did everything well, but she had this delusion, by which her whole life was altered. I found in that case, as is found in most cases of monomania, that clear back to childhood there had been evidences of something not quite right with the cerebral functions. The woman had always been extremely vain, wildly ambitious to shine in fashionable society, and with a marked excess of egotism. These are characteristics which frequently precede the evidences of monomania. This was well exemplified in the history of Guiteau.

Although Esquirol used the term monomania as belonging to those cases in which there was an excess of animal spirits and of the emotions, such as ambition and anger, which are related to aggressiveness and power, there can be no doubt that there are two distinct classes of monomaniacal persons,—those in which there is a condition of emotional exaltation, and those in which there is a condition of emotional depression. In other words, precisely as in general insanity we have two types of cases, represented by mania and by melancholia, so do we have in this monomania, or partial or limited insanity, two classes of cases, the one corresponding to general insanity with emotional exaltation, and the second corresponding to general insanity with emotional depression.

I have already expressed the opinion that monomania may exist without the presence of a delusion and be purely emotional. At the same time, in most cases, sooner or later there comes a distinct delusion. Some writers say that the character of the delusion is dominated by the character of the emotional disturbance. Others say that the character of the emotional excitement is the result of that of the delusion. For instance, a man who imagines that he is the Czar of all the Russias is, by the very belief itself, kept in a perpetual state of exaltation, while a man who believes that he has committed the unpardonable sin is by his belief thrown into a state of deep depression. I do not believe that the delusion produces the mental state always, or that the mental state produces or dominates the character of the delusion. It seems to me that all that can be said is that these two things are correlated, and that a condition of mental depression tends to delusions of persecution and delusions of a depressive type, and that in a condition of emotional exaltation the delusions partake of this general character.

The delusions of monomania, like the delusions of ordinary general insanity, often grow out of something having a real existence. A melancholic or hypochondriacal monomaniac may have some bad feeling, which is increased in his mind until it dominates his whole life: thus a dyspeptic symptom leads him to the belief that he has no stomach. These cases are to be distinguished from the cases of hypochondriacal melancholia by the fact that the delusion is "systematized." The systematized delusion, you will remember, is one said to be characteristic of monomania, and is one about which the patient reasons, and which he defends.

As an example of this let me cite a case which recently came to my notice,—that of a gentleman, now dead, who was at the time a colonel in the United States Army. This case also well illustrates how closely monomania relates itself to sanity, and how difficult it sometimes is to draw the line, and to convince others, especially those who have no medical training, where the line is to be drawn. This man was, at the time I speak of, stationed at one of the frontier posts of the country, and was performing, with satisfaction to all, the duties appertaining to his rank. One day he said to a friend, "My life in this frontier post, from its monotony, would be absolutely unsupportable if it were not for my daily mail which I get from my dead friends. I had a letter from your brother last week, and every morning I live in expectation of receiving a letter from some deceased friend or relative." He was asked how the letters came, and it was learned that they were received through a certain living medium in the eastern part of the United States. This lady would almost daily write a letter to this man, which was

received by him with absolute credence as coming through her from the spirit world. We come right here upon the delusions of spiritualism, and we come to a class of cases in which it is very difficult to say where sanity ends and insanity begins. In matters of religious belief, every man who believes strongly in a certain faith might consider every other person who believes in a different faith to be insane. Profound belief in the daily presence of spirits may coexist with great scientific or business acumen.

Although it seems impossible to fix a line which shall separate a sane from an insane religious trust or belief, it can hardly be doubted that many of the devotees of spiritualism ought to be considered as monomaniacs. Let me refer again to the colonel I spoke of a moment ago. On one occasion he said, "There is one thing that gives me great comfort, and that is that I am a descendant from the Virgin Mary." Some one intimating a doubt of that genealogy, he continued, "I know that I am a descendant of the Virgin Mary, because I had a letter from her, and she says so, and she certainly ought to know." Can we hesitate in deciding that here was a delusion which was thoroughly systematized and logically defended by its holder? The first premise, that he received letters from the spirits, was false, but his reasoning based upon it was sound.

Another case which came under my notice a year or two ago was very interesting, and also illustrates the difficulty sometimes met with in drawing the line. It was that of a lady who saw visions. If a person sees a vision, and recognizes that it is a vision and does not believe that it has a real existence, that person is not insane; but when a hallucination so takes hold of the mind of a person that he is convinced of its reality against the evidences of touch, that person is insane. This lady of whom I have spoken sat in my office, and, pointing to a particular part of the room, said, "There is a stick rising up: it grows out, and now it has on it the head of a big bull-dog." She then went on to describe its heavy, sensual, hanging jaw, vicious expression, etc. She said that she knew that there was no bull-dog there, that she simply saw it as a vision. Then she went on to state that she knew what this meant, that the vision was sent from the other world as a symbol of something that was past. She said, "That bull-dog is given a resemblance to a certain doctor, now dead, whom I once knew. He was a coarse, heavy, sensual man, and this vision is sent to me to show that his disembodied spirit still holds to the mould of its earthly tabernacle." That woman understood that the thing which she saw had no real existence, and you would at once say that she was sane, but yet she evidently was insane, because she believed that the vision was sent to her as a symbol of something else. She also had all sorts of ideas about a presence at night. She would be awakened out of sleep with a horror and fear that a spirit was behind her. She would at times get out of bed and pray for hours that she might be rid of this presence, which she believed to be the spiritual essence of the devil sent to torment her. She was clearly over the line.

I shall now bring before you some patients suffering with monomania. The first patient is Miss P.

"I understand, Miss P., that you have had a remarkable life. Will you tell us something of your past history?" "Do you mean my personal history?"

"Yes. Tell us something about your life." "When I was brought here I was kidnapped. I was not examined at all. Ever since I was poisoned, which is seven years ago, I have been trying to earn my own living, but there have been parties determined to ruin me. I have not succeeded in getting work because somebody always opposed me. I look upon it as the work of political parties on account of my father's belief."

"What about your ancestry?" "That is what they want to find out. My father was a Stuart, but there are different branches and they are not sure which house it is. There was a mistake made in raising the children and bringing them up among others. This was during the Revolutionary War. My parents lived about the time of the War of 1812. As far as I can make out, both my grandparents lost their lives in this war, and the children were raised among others. The cousins wanted to force me to become one of them, especially one of the Martha Washington descendants. She is determined that I shall live with her, and I can recall many things that she has done with this object."

"Who was it that tried to poison you?" "The party that was implicated said that they wanted to destroy my intellect, but not my life. Something was said about an insane asylum. That was the woman Morris, who is a descendant of one of the parties born on the American side. She is really one of the Marys, and is one of the Jersey links. It is just a fight between some of the American

links and the other links. I am a connecting link between two contending parties. They both have about equal rights."

"Are you happy or unhappy?" "I am naturally buoyant and spirited, but I have passed through a great deal of trouble." (The patient was now removed.)

Gentlemen, you there see an example of what I mean by a thoroughly systematized delusion. That woman argues and reasons about her delusion. You see also that the delusion is not dominated by the emotional condition. She has a mixed delusion. She has a delusion of persecution and a delusion of exaltation. She believes that she is something great, and even has a chance for a throne. That is a delusion of exaltation. She also believes that she is persecuted because of her greatness: thus she has the delusion of persecution grafted upon a delusion of exaltation. The woman's mental functions, disconnected from her delusions, are fairly well performed.

I shall now have a patient brought in who believes that he is Melchizedek the high-priest and prophet.

"Well, C., how are you feeling?" "First-rate."

"You look healthy." "I should like to travel around; I would not mind taking a trip to Harrisburg."

"I see that you have lost your sight; how did that happen?" "I was born with cataracts."

"Does that interfere with your seeing visions?" "Not as I know of. I don't think so. I expect to see a vision of the Lord to-night."

"Have you had such a vision lately? "Yes. A few nights ago."

"Tell us about it." "The Lord appeared to me in great splendor, in a fiery flame, with a shining face. Take, for instance, that young man sitting up there. What kind of an establishment is this?"

"This is the lecture-room." "Is that so?"

"What did the Lord say to you?" "The Lord appeared unto me and said, 'I am the Lord, thou art my servant.' The institution authorities think I have given up what they call foolishness; but I am still a prophet. I would not object to taking a trip to Harrisburg for my health."

"Are you perfectly well?" "Yes, I believe so."

"Are you perfectly happy?" "Not at present time. I want to be where I can hear the conductor say, 'This train for the east. Change cars for Harrisburg,' or some other point."

"Do you really see the Lord, or do you only imagine it?" "It is as true as I am sitting here."

"Does he ever touch you?" "No. The Lord does not treat people that way. He stands at a distance, in human form; sometimes just a fiery flame." (The patient was now removed.)

There you see the condition of exaltation with no depressive delusions. You see also that the hallucination goes as far as hearing and seeing, but does not affect the sense of touch.

The next case illustrates a depressive delusion. It is of the melancholic type.

"G., where were you born?" "At Argyle, England."

"Are you married?" "Yes; I have been thirty years."

"What is your business?" "Bricklayer."

"Do you think that you could lay bricks now?" "Yes, I could work, although I have been badly used."

"What have they done to you?" "I have been strangled four times in my sleep. They were trying experiments on me, for what reason I do not know, unless it is because my wife has been here. There are other parties concerned in it."

"Have you seen your wife?" "Yes, I saw her and three others."

"When did you see her last?" "It is about three weeks since I saw the one I took to be my wife. I hear her frequently down-stairs. She has been detained. I hear her sometimes on one side of the hospital and sometimes on the other. Before I came here somebody got into my house and chloroformed me and got at my wife." (The patient was now removed.)

This man probably could work as well as ever, except as his attention was drawn from his work by his delusion. He believes that his wife is perpetually attacked by people, and that she is confined down-stairs. This man represents a very dangerous class. His mental functions are sufficiently perfect to carry out any scheme which may come from his delusion of persecution. He may fasten his delusion on some one and make a violent assault on that party. If this man believed that it was John Jones who had chloroformed him and ill-treated his wife, he would be very likely to assault John Jones. This is practically the most dangerous class of lunatics, and it is the class which is, perhaps, least frequently recognized as crazy.

In concluding this lecture I want to say a few words in regard to the relations between this form of insanity and high intellectual power, and especially with reference to genius. There can be no doubt that a large proportion of those who are considered as the most pronounced examples of genius are cases whose intellects are forever on the border of insanity. To say that an individual is a genius usually means that he has a certain function of the mind exalted high above the other functions. A man whose imagination is developed out of proportion to his reasoning faculties is apt to be a poet or a novelist, and produces works which may live through centuries. Such a man is above his fellows, not by virtue of great brain-power, but because his brain takes a certain limited direction. A man who is dominated by his imagination is always in danger of being swept off his feet by the rush of his imagination. A genius is recognized as a man not practical. By a man not practical is meant one lacking in common sense; and common sense is, after all, nothing more or less than the term used to express good judgment in the ordinary matters of life. A man who has great imagination usually lacks reasoning power, and is not practical, because of his great imagination. One of the best examples of the relation between great imaginative power and monomania is John Bunyan, the author of "The Pilgrim's Progress," which, according to any standard that we have a right to set up, is one of the five or six greatest books in the English language. It is certainly more read than any other book, with the exception of the Bible. No one who reads the history of Bunyan's life can doubt for a moment that he suffered from monomania with depressing delusions. He, however, finally recovered.

Another remarkable instance of the close relationship between insanity and genius is afforded by the famous Victor Hugo. His uncle died insane; his brother, Charles Hugo, in his late boyhood gave promise of remarkable talent for literature, but before twenty he became insane, and finally passed into a condition of complete dementia. One of the daughters of Victor Hugo is now and has been for many years living in an insane asylum. According to the London *Medical Times*, there are in many of Hugo's finest productions numerous passages which could only have been conceived by a diseased imagination, and are indelibly stamped by madness. A remarkable fact in the mental history of the great French poet is that along with his great imagination there was a shrewdness almost as remarkable. No banker could have more carefully managed his fortune; no politician could have more tenderly nursed his popularity. He who had amassed over a million of dollars died the idol of a communistic democracy; he who had played at fast and loose with all political parties was buried amidst a tumult of universal sorrow.

The prognosis in monomania is exceedingly unfavorable. This is because the condition is so often the result of a faulty formation of some part of the brain. There is a peculiarity of the cerebral organization which shows itself from the very first.

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## *GENU VALGUM, AND ITS TREATMENT BY MACEWEN'S OPERATION.*

By I. Fletcher Horne, F.R.C.S.*

RICKETS holds the foremost place in the production of this deformity. The two chief factors of rickets will be found to be improper food and insufficient clothing, so that among the children of the poor, where the supply of these necessities to the physical well-being is often in inverse ratio to the demand, we find rickets and its resulting deformities rampant.

Genu valgum may exist at birth, or may originate in fast-growing children from want of mother's milk; the non-rachitic form showing itself often during convalescence subsequent to measles, whooping-cough, and scarlet fever, also during the fast-growing period of approaching puberty. We may also see considerable in-knee in robust, tall, overstout, and overgrown adults, height and weight having both contributed to it. In-knee is accompanied for the most part by a relaxed condition of the ligamentous system in general, and is usually preceded by flat-foot.

The ligaments, especially on the inner side of the ankle and those on the sole of the foot, having yielded, the arch of the foot becomes flattened and the foot itself everted: the inner malleolus projects inwards and is lowered, the shaft of the tibia then inclines outwards, the long axis of the femur becomes inclined inwards, the inner condyle protrudes, the internal lateral ligaments yield to the superincumbent weight, and therefore the weight of the body is no longer borne in a

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vertical line and transmitted through the long axis of the femur to the arch of the foot. The femur being thus inclined inwards and the tibia outwards, the condyle of the femur necessarily assumes an oblique position from without inwards.

In its commencement genu valgum is only apparent in the erect position, and is not seen in the horizontal. After some time it becomes permanent; but even whilst the bones are soft, although altered in shape and the internal condyles lengthened, these cases may still be treated by suitable splints. But when the bones have become hard,—and they do in some cases become abnormally hard, almost as ivory,—osteotomy is required.

It is the treatment of the more severe cases, those of children over 10 years of age and adults, to which I would call attention. I think it may be laid down as an axiom that when the structures of the limb have lost their elasticity, the bones consolidated, and impairment of size of the external condyle and the opposite articulating surface of tibia is considerable, and where the patella has left its natural groove and is found outside of the external condyle, and adult age is near at hand, osteotomy is required. I prefer the supra-condyloid osteotomy, as recommended by and named after Macewen, of Glasgow.

A short and ready way to a goal has many attractions, and not the least of the anticipated advantages consists in the saving of time and the appearances of the limb, especially in adults. We must not forget that considerable curvature of the thigh is not incompatible with comfortable use, still I think I may venture to promise, after operation, improved appearance, addition to the height, and, after a time, increased usefulness of the limbs. Aided by the adoption of the quasi-subcutaneous principle, and the beneficent influence of antiseptic dressing, osteotomy for the cure of genu valgum has become one of the most satisfactory operations in surgery.

The operation is done under the steam-spray, Esmarch's bandage being applied to the whole length of the limb to a little above the place of incision. The limb is now placed on a sand-pillow, or, better, a cylindrical wooden block, since the latter offers more resistance, and sand-bags are objectionable in antiseptic operations, to afford an unyielding surface, against which the chisel will act with greater effect. An incision is made one finger's breadth above the tubercle of the adductor magnus muscle on the inner side of the femur; the incision made is one and a half inches long, down to the bone, being parallel to the femur. The chisel is then introduced, first longitudinally, until it reaches the bone, then turned transversely, and, in cutting the posterior inner part of the bone, should be directed from behind forward so as to cut away from the femoral artery, which passes through the aperture of the adductor magnus above the seat of the operation. From this position the chisel is made to move forwards along the inner border until it comes to the anterior surface, when it is directed from before backwards and towards the outer posterior angle of the femur. When the bone is divided about two-thirds through, the limb is grasped by one hand of the surgeon above the wound, the other holding the leg, and by the use of a little force the bone snaps. The elastic bandage, used to restrain the bleeding, is now removed and any little bleeding points taken up, a pad of gauze is placed over the wound and the splint applied.

The splint Macewen uses is a modification of the half-box, the outer portion being carried up like a long splint to about the third or fourth rib, and it projects beyond the posterior splint at the foot; this projection is fixed in the clamp of a bed-rest, and so the whole splint and limb are kept perfectly firm. The back-piece originally used curved laterally, but I believe now Dr. Macewen has taken to a flat one. I have used both, and I find the flat piece keeps the limb in better position. The thigh and knee are fixed to the outside splint, while the lower limb and foot are thrown inward by abundant padding.

Dr. Macewen says, "If the temperature remains about normal, if there be little pain and absence of discharge, the limb ought not to be touched for a fortnight, at the end of which time the dressing may be removed, when the wound will be superficial and partly covered with epithelium."

The mallet used is of steel; the chisel, or osteotome, used was Macewen's, with blade and octagon handle in one piece, and furnished with a rounded projecting head. The blade is bevelled on both sides so as to resemble a very slender wedge; it is marked in half-inches so that the thickness of the bone can often be ascertained, and thus the distance predetermined. Dr. Macewen recommends three sizes of chisels, but in my hands one has answered well for all my cases.

Case I.—T. D., aged 9, admitted to Beckett Hospital from the Union Workhouse with double in-knee, the feet separated twelve

inches when he stood erect, and he walked very awkwardly.

*January* 9, 1885.—I performed Macewen's operation on right leg with antiseptic precautions; no hemorrhage. The dressing first removed January 26; there was slight suppuration and a slight superficial slough.

*February* 24.—The splints were removed. On measuring the limb from the anterior spinous process to the inner malleolus, the right leg measured twenty-two inches, the left twenty-two and one-half inches; the right leg was put into plaster of Paris bandage. February 27 the patient was again put under ether, and with the spray and antiseptic precautions the operation was performed on the left leg; there was no hemorrhage; the wound was dressed with McGill's silk.

*February* 28.—Slight rise of temperature, reading 100° F., but afterwards throughout the case the temperature was normal. The wound was dressed March 26, when there was good union; the limb was put up in plaster of Paris bandage.

*June* 19.—Discharged. The boy can walk with the aid of crutches; the legs are equal length and straight.

*November* 19.—I saw the patient to-day; the legs have not shrunk, are perfectly straight, and he walks exceedingly well.

CASE II.—Eliza B., aged 16, was admitted under my care February 23, 1885, suffering from genu valgum of a very marked character. The patient was short and stout, with a satisfactory family history. The in-knee was more marked in the right than the left leg, and considerable enlargement of the lower epiphyses of both femora; no curvature of tibia or other bones. When the knees were closed there was a distance of ten and one-half inches between internal malleoli; the patient walks very badly and is easily tired.

*February* 27.—The patient was placed under ether. I divided the left femur after Macewen's method, under spray; I used wire sutures for external wound, which was dressed with McGill's silk.

*February* 29.—Temperature rose to 100° F., but very slight constitutional disturbance. The wound healed slowly, a small ulceration remaining for some time. April 19 the limb was put up in plaster of Paris bandage; good union; length from anterior superior process to internal malleolus, right, twenty-seven inches, and the left, twenty-six inches.

*April* 17.—Operation was performed on right leg, using catgut sutures and Lister's gauze dressings.

*April* 19.—Temperature 100° F. Wound healed rapidly; only dressed three or four times. May 25, plaster of Paris bandage applied. The right leg united in a perfectly straight position, but there was a sharp angle left on the outer side of the fracture. The patient had several attacks of tonsillitis with enlarged glands during the month of May.

*June* 19.—The apparatus was removed, the legs being quite strong, ankles and knees touching, and was able to walk with crutches.

*November* 23.—Examined the patient again to-day; legs perfectly straight. She told me she had walked three miles the day previous without being tired.

CASE III.—H. K., admitted March 30, 1885, suffering from genu valgum. The patient was a flabby, unhealthy-looking lad, tonsils chronically enlarged, teeth irregular, and the ribs rickety. There was a well-marked genu valgum of right leg, with large lower epiphysis to femur, especially on the inner side, also slight genu valgum on left leg; length from anterior superior spine to external malleolus, right, twenty-three inches, left, twenty-three and one-half inches. When the knees were in apposition the distance between the malleoli was six inches.

*April* 1.—Under ether and the usual antiseptic precautions the operation was performed on the right leg. May 4 the wound had healed, the knees and ankles are in apposition, and the patient's health has considerably improved, there being no difference in the length of the limbs. The right leg was placed in plaster of Paris bandage.

*May* 12.—The bone has become firmly united, the tonsils were excised by guillotine, and he was discharged on the 20th inst.

The temperature rose to 100° F. on the evening of April 1, and again on the 4th and the 8th it rose to 102° F., and on the 9th of April it rose to 101° F., but from no apparent cause.

CASE IV.—S. M., aged 19 years, miner, was admitted May 16 with synovitis of right knee. The patient was unable to stand, except by holding on to furniture, from an injury received in the colliery a year before; this prevented him from earning a livelihood. The synovitis subsided under treatment, and it was found he had a well-marked genu valgum on the right leg, and the internal condyle was increased enormously in size, with the sharp corners almost projecting through the skin. On the left leg he had an extensive curvature of the tibia, which was treated by osteotomy.

*July* 24.—I performed Macewen's operation on the right thigh ; catgut ligatures were used for outside wound. The wound was dressed only once, and on the 3d of August was quite healed. The exostoses of bone were removed at a later period.

The advantage of Macewen's operation over those of Ogstan, Reeves, and Barwell consists in the greater simplicity of the operation, and the freedom from danger to the joint. After the operation, nature fills up the triangular cleft in the femur. The outer side of the limb is apparently lengthened. It assails the insufficient external condyle by depressing it to its proper place and the articular surfaces of both condyles to their proper plane.

The four cases of osteotomy which I have narrated above go to prove the slight constitutional disorder set up by an operation of some magnitude, the great improvement that may be brought about in the personal appearance of patients of this class, and the turning to good account the usefulness of the limbs themselves, whilst last, but not least, may we not infer that this operation is a distinct advance in the art of surgery?

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## *ON THE INFLUENCE OF AGE ON THE DOSAGE OF NUX VOMICA, WITH SOME REMARKS ON ITS THERAPEUTICS.**

By J. H. Musser, M.D., Philadelphia.†

IT is believed that the following facts regarding nux vomica are not generally known or not fully appreciated by the profession, and that, as far as the writer knows, one of them is entirely new. I refer to the influence of age on the dosage of this drug. The only reference to this important matter that I am aware of is in the last edition of Wood's "Therapeutics," where it is stated that young animals have been found to be less susceptible to the drug than old ones.

A shrewd medical man observed to the writer, some time ago, that he could never get much service from nux vomica except in the aged. Upon endeavoring to find the reason for this it occurred to me that possibly, as with many drugs, the susceptibility to its influence increased with the age of the patient. Opportunity has been afforded me to test this surmise, and I can affirm that repeatedly in the out-patient department of the University Hospital its truth has been demonstrated. It is with pleasure I can record that many of my students and my former assistants, Drs. Fussel, Mercur, Emery, Dock, Allyn, and others, can corroborate these statements.

The preparation of nux vomica used was the tincture,‡ and most of the experiments were made with the solution of the Pharmacopœia of 1870. As is well known, it is about one-third stronger than that of 1880.

The maximum dose at any age was not administered, but the usual dose commenced with. This was done, and should be done, to guard against dangers that may arise from idiosyncrasy or cumulative action. Beginning, therefore, with 10 drops three times daily, it was the custom to increase it 3 or 5 drops every second day until some physiological effect was produced, as twitching of some group of voluntary muscles. As soon as this effect was produced the dose was reduced one-third, and in a few days, especially if desirable to produce full effects, ascending doses were again administered. They could invariably be increased beyond the former limit.

Going over the notes of some fifty cases, I find that at from 15 to 40 years of age 45 drops or more of the tincture was almost invariably well borne. After 40 years it was the exception to be able to increase the dose over 35 drops without causing some disagreeable symptoms. In all my cases extreme susceptibility was not observed. Six had apparently no influence on the size of the dose.

One of the patients, aged 24, took 200 drops three times daily with most decided benefit. To another, aged 16, 125 drops were exhibited without experiencing any bad effects. On the other hand, a male, aged 60, could take but 20 drops, and not one over 50 could get beyond 35. Patients aged 16, 24, 28, 35, and 40 took 40, 55, 30, 45, and 45 drops respectively before any therapeutic benefit could be seen. §

At first sight it would appear that the above were unusually large doses. When one remembers that there is about $\frac{1}{200}$ of a grain of strychnine in five minims of the tincture of nux vomica, the dose seems not so great. My observations have taught me that with the usually prescribed dose we can get, in most

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‡ For obvious reasons it is not safe to dispense strychnine or other alkaloids in the promiscuous crowd of out-patients, especially as the druggist must dispense rapidly.

§ I do not refer to paralytics, etc., for to these people, even in advanced life, large doses can be administered.

cases, but little results beyond what arises from its local action as a bitter; moreover, what effects we may secure are transient unless we increase the dose. The system readily becomes accustomed to its stimulation.

It is well known that neurologists and ophthalmologists push this drug in a similar manner, but I do not know that ascending doses have been used at the hands of others in cases similar to the ones hereafter to be referred to.

Two effects of large doses of the drug were observed that, under certain circumstances, would be disadvantageous,—the production of diarrhœa and of frequent seminal emissions. Small doses of laudanum would readily control the former, although it is rare that the case would demand such very large doses. The latter symptom could not well be remedied.

*The Therapeutics of Nux Vomica.*—Nux vomica is eminently of service, according to my experience, in dyspepsia of the atonic variety, with or without depression of spirits, hypochondriasis, headache, weight on the head, and other nervous phenomena. It is in these cases that increasing doses are of value. I believe this good effect to be due not alone to the local irritant effect of the drug, as suggested by Ringer, nor to its tonic influence on the muscle and blood-vessels, but to its systemic effect, whereby reflex excitability of the spinal and vaso-motor centres is increased. Digestion is eminently a reflex process. This is seen from the efforts of mastication, throughout the entire process, to that of defecation. Now, it seems to me that atonic dyspepsia and slow digestion, with the train of morbid symptoms that arise therefrom, are due primarily to torpid nerve-centres. They do not respond to the stimulus of food, and hence refuse to send the requisite amount of blood to the glands by virtue of their influence on the vessels, or to stimulate glandular secretion. In fact, this element of diminished reflex excitability may be present, and it seems rational to think so, in all forms of dyspepsia, whether from general debility, the excessive use of indigestible articles of diet, or of stimulants. In these cases it is requisite to get the full effect of the drug. Likewise, in the dyspeptic symptoms that belong to heart-disease, bronchitis, or cirrhosis of the liver, the good effects of nux vomica are no doubt on account of its tonic effect on the blood-vessels. In gastric catarrh, on the other hand, small doses of the drug should be used to secure its local irritant action. It seems to me the same theory, the increase of reflex excitability, may partially explain the good effect of this drug in constipation.

As a respiratory stimulant the action of this drug is well known. I once ordered it to a young girl in doses of 20 drops, and was surprised to find her father had had the bottle replenished twice for a cough. On the occasion of his third visit he confessed it was the best cough mixture he had ever had. Emphysema and chronic bronchitis were the cause of his cough. Last winter the nux vomica kept at work the entire season and enabled to walk long distances a man who for years previously would lose weeks and weeks each season on account of asthma and emphysema. His "wind" improved wonderfully, and his great boast was his ability to walk home with his fellow-workmen at their gait. I could readily repeat many instances of the value of this drug where respiratory stimulants are indicated.

In mental and physical depression due to prolonged excitement this drug is of value. One of my students took from 600 to 800 drops daily of the tincture, and thereby successfully tided himself over a period of great strain. In fact, he studied harder and kept later hours than at any other examination period, and with less detriment to his health. He is myopic and astigmatic, and this was the first time he came out of his studies without suffering from eye-strain. The doctor writes me that he has used the drug since in practice under similar circumstances. For instance, he helped along well a young society girl, who was unusually busy with engagements, until the rush was over. The uses of the drug are as dangerous, however, as the use of any stimulant, and should be given only on extraordinary occasions for the purpose indicated. Its use as above serves to show its power as a nerve-stimulant.

It has recently been the custom of students of medicine to take caffeine to keep them awake for study. My observation of the students who had taken one of these drugs was favorable to the use of nux vomica. The ones who took it came off with much better health and less nervousness than the caffeine-eaters.

Many patients complain of being more tired on rising in the morning than when retiring. This has disappeared frequently on a course of nux vomica. I have also the records of cases of spasm of the œsophagus, of excessive flatulency, of nervous depression, characterized by fear, by ready excitability, by mental lethargy, irritability, etc., and of forms

of hysteria,—occurring late in life especially,—which were improved by this drug.

There are, of course, other well-known uses for this valuable drug which time and space will not permit me to detail. In small and frequently-repeated doses it has been recommended to be used, but I confess I have never had any good results from its use in this manner. Ringer recommends it in acute gastric catarrh, with "sick headache" and slight nausea, only in doses of 1 drop, in water, every five or ten minutes, until eight doses are taken. It may be a mere coincidence, but nevertheless in every instance of a similar character in which I used it, it caused vomiting without any relief.

The following are some of the conclusions which may be drawn from the above statements:

1. The effects of nux vomica are in inverse proportion to the age of the patient; the susceptibility increases with the age.

2. The usual doses of the tincture indicated in the text-books are inadequate for many practical purposes, and do not represent the usual dose of strychnine.

3. It is a powerful and rather transient stimulant.

4. The best therapeutical effects can be secured in many cases only by pushing the drug almost to the physiological dose.

5. The system soon becomes accustomed to its use, and the dose must be increased.

6. The good effects in dyspepsia are largely due to its power to heighten reflex excitability.

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## *PALATABLE THERAPEUTICS.**

By Franklin H. Martin, M.D., Chicago.†

NOWHERE in medicine is the strong hand of radical reform more needed than in therapeutics. An innovation of a radical nature in the field of *materia medica* or *therapeutics* has, until lately, been looked upon as something little short of irreverence. It seemed to be a foregone conclusion that the old traditions with their long lists of nauseous and incompatible boluses, infusions, decoctions, tinctures, extracts, powders, salts, pills, oils, blisters, etc., must be religiously guarded from the insinuating finger of reform. A new curative method or a new theory of administration was very liable to be condemned as quackery. The present state of scientific thought, however, with its intense light, is gradually dispelling this fog of exclusiveness, and even in therapeutics we begin to feel that we are out of darkness.

We now freely admit that many of therapeutics' greatest strides have been the outcome of suggestions gleaned from the fields of charlatanism. We have been led at a late hour to recognize the advantages of faradic, static, and galvanic electricity as a therapeutic agent, and to place it upon a legitimate and scientific basis. Massage and "Swedish movement" have been recovered from the same questionable ground, and have fast become valuable adjuvants to our curative list. And upon going back over our long list of vegetable, mineral, and animal drugs, we find that the majority of them were born in barbarism, and from their obscurity were made prominent by the hand of the busy empiric, and by a justly-earned reputation have forced the doors of our pharmacopœia. Thus by investigating and appropriating in all places we have increased.

While we have pursued our explorations in the fields of medicine and established therapeutics upon a more scientific basis by means of improved methods of investigation, while we have isolated new remedies, established new principles, and developed new theories, have we not neglected too much, some of us, to bear in mind the practical fact that to be successful and humane practitioners of medicine we must consider the peculiar tastes of our patients as well as the scientific application of our remedies to disease? While it is gratifying to *us* to know of a certain drug its *modus operandi*, it is gratifying to a long-suffering *patient* to have that drug administered in a palatable form.

Herein lies the secret of success of that unscientific and utterly irrational dogma of Hahnemann—homœopathy. The so called remedies of homœopathy are tasteless because of their infinitesimal division. On account of their palatability they are popular with that class of patients who will not tolerate nauseous drugs, and who are not educated to the point of appreciating the utter fallibility of homœopathic so-called remedies. There is not a regular practitioner of medicine who has not been annoyed by some misinformed patient persistently asserting that the only difference between regular practice and ho-

* The substance of this paper was read before the Chicago Medical Society.

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mœopathy is that the former includes all those drugs which are unpalatable and strong, while the latter all that are palatable and mild. Judging from prescriptions that we often see, we cannot but admit that there is some reason for this unjust conclusion.

We can learn one very important lesson from this unfortunate state of affairs. We find homœopathy, possessing absolutely no merit, succeeding because of three qualities of a nature which demonstrate its weakness. These qualities are palatability (because of infinite division), harmlessness (because of inertness), cheapness (because of lack of substance). If a system of medicine can conceive, survive, and thrive upon these negative qualities alone, how much more could be accomplished by *true* medicine, possessing the accumulated merit of all time, if *it* would adopt as far as possible these requisites of homœopathy as adjuvants of its system of administration!

The object of this paper is to discuss, without making any claims to originality, the means by which we can avoid offending the palate of our patients while administering and receiving all the advantages of our many efficient remedies.

*Alkaloids.*—Hahnemann made all medicines palatable by infinitely dividing them. We can make many of our medicines palatable by concentration. In this department very much is constantly being accomplished by chemistry and pharmacy. The key to a great work in this direction was discovered in 1817, when Sertürner, a German apothecary, announced the existence of morphine. This gave an impulse to organic chemistry which has been, and will be, of inestimable value to pharmacology. Since that time a large number of alkaloids have been extracted, many of which have already taken prominent places in medicine as substitutes for original bulky drugs. These vegetable alkaloids usually possess a definite physiological action nearly resembling the action of the parent drug. They have a definite chemical composition, and with acids form salts. They possess, therefore, the very desirable properties of uniformity and adaptability. Representing, as many of them do, all the medical virtues of the crude drug from which they are extracted, in them we have a very concentrated and uniform substitute. By improved pharmaceutical methods these concentrated alkaloids can be divided into representative doses, made into small granular masses with proper excipients, and thoroughly disguised by a thin coating of tasteless and readily soluble gelatin or sugar; thus making an elegant and perfectly palatable dose of uniform strength, of definite composition, representing what in the old galenical preparation of the crude drug would have been nauseous, ununiform, and disgusting.

Already about twenty-two of our most prominent drugs are represented in their alkaloids in these little masses, each contained in an elegant gelatin or sugar sphere one-sixteenth to one-eighth of an inch in diameter.

*Glucosides, or Neutral Principles.*—Besides the alkaloids there are certain proximate vegetable principles which are of great value to us as palatable therapeutists. They are of definite and uniform strength like alkaloids, and many of them, like the alkaloids, represent the medical properties of the vegetable from which they are extracted. They are classed as *glucosides.* Amygdalin, the first principle of this kind isolated, was discovered by Liebig and Wöhler in 1837. In the great march of organic chemistry the glucosides have not been neglected, and we find that about twenty of our valuable vegetable drugs are as well represented by these neutral principles as the alkaloids represent all that is of medicinal value of their particular source. These principles are usually in the form of crystals, or amorphous powder, and represent in many cases the full medicinal value of the vegetable from which they are extracted in a very concentrated and uniform shape. They are, therefore, rapidly occupying a prominent place in our therapeutics, and becoming as popular as their worthy rivals,—the alkaloids. As stated above, about twenty of these glucosides have been tested and arranged, and already, by the enterprising pharmacists, have been manufactured into gelatin- or sugar-covered granules of appropriate doses.

Thus we find that we can get the full result of the physiological action of forty of our most powerful and valuable drugs represented in their *active principles*, the alkaloids and glucosides. They represent the properties of the mother-drug free from all extraneous matter,—*concentrated, uniform*, and *absorbable.*

Unfortunately, however, this branch of pharmacology is in its infancy, and many alkaloids and glucosides are still locked in the mysterious womb of the mother-drug, and until they are searched out and delivered we must adopt other means of making palatable our doses.

*Solid Extracts.*—By means of extracts freed

of all unnecessary extraneous matter we can administer many drugs palatably by adopting the gelatin capsule and the gelatin pill. Since the nauseous uncovered pills have been displaced by absolutely tasteless gelatin- and sugar-coated ones, the old popular abhorrence of this method of taking medicine has subsided into a pleasing indifference. Pills of a reasonable size are no longer objected to. The smaller-sized capsules are becoming very popular with both patient and physician. They have been the means in my hands of allaying the prejudice against the "Old School" of more than one homœopathic adherent. By means of these capsules the practitioner can, by the exercise of his ingenuity, administer a great many valuable but nauseous doses to the most delicate palate. The gelatin-coated pills will also be of advantage to the physician in administering well-tried combinations as well as single remedies. We have been given in the last Pharmacopœia thirty-two reliable solid extracts, which represent the majority of our most valuable vegetable drugs. The full medicinal effect, with few exceptions, can be obtained from these drugs by administering their extracts, palatably and elegantly stored away in these little capsules. Besides the extracts, there are a great number of other drugs that can be administered in the capsule or the tasteless pill. The salts of the various metals that are administered internally can be administered in capsules, or the pill or granule. The bromide and iodide of sodium and potassium are suited for capsules. The powdered salt can be given in doses of from 2 to 5 grains in capsules that can be readily swallowed. It may be necessary in some cases, after giving large doses of these salts in capsules, to follow them with a small quantity of water, in order to dilute the salt as it becomes free, and before it comes in direct contact with the mucous membrane of the stomach, as otherwise irritation of the stomach is caused.

If one is really desirous of making medicines palatable, his ingenuity will suggest many drugs that can be represented in pill or capsule that ordinarily are put into vile combination in mixtures.

*Tasteless Salts.*—There are a number of salts and combinations that are practically tasteless that can be administered palatably in powder or dissolved in small quantities of water. In our last Pharmacopœia I find ten that can be given in teaspoonful doses of water. Tartar emetic is a fair example of this class. There are eight that can be given as tasteless powders in small doses. Of these calomel is an example.

*Tinctures and other Tasteless Solutions.*—Quite a list of our tinctures can be given in palatable and appropriate doses by mixing with drachm doses of water. This makes a very elegant and at the same time effective method of administering tasteless tinctures, and deserves to become popular. Of the tinctures recognized by the Pharmacopœia eight can be administered in this way. Tincture of gelsemium and tincture of aconite may be mentioned as examples. It is a fact worthy of note that many of our tinctures that are now unpalatable are so because of extraneous matter they contain, which might by proper methods of preparation be extracted and eliminated without affecting the medicinal value of the drug. Fowler's solution is an example of a chemical solution that is palatable and can be given in small doses of water. I find six similar solutions that can be rendered palatable in the same way.

*Oils and Oleoresins.*—Until of late the most difficult problem to solve in palatable prescribing was the administration of the oils and oleoresins. They are of great value to our armamentarium, and indispensable to complete medicine. In the uncovered state they are the most abhorred drugs, even by the stanchest friends of regular practice, that our list contains. Castor oil, cod-liver oil, turpentine oil, olive oil, and copaiba have been the means, no doubt, of converting a multitude to homœopathy. To our enterprising pharmacists at last our thanks are due for no longer being obliged to insult the stomach and disgust our patients by insisting that they pour down these greasy nauseates. The *flexible elastic capsule*, first put into practical form by our large pharmaceutical firms, is bound to become very popular as a means of administering the oils and oleoresins. One large Western house (Parke, Davis & Co.) has manufactured these capsules and filled them with sixty-seven different formulas. The responsibility rests with the physician to see that these valuable suggestions, that are put into practical form by well-known and reliable pharmaceutical houses, are taken advantage of and made requisite of our practice. These soft elastic capsules are manufactured in all sizes from one-half ounce down to two minims. They are easily swallowed, and afford complete palatability.

*Acids.*—We have disposed of the majority of our valuable drugs, still we have a few that it is necessary to occasionally employ that can-

not be administered in granules, in pills, or any capsule. Among these we get the acids. The acids, while they cannot be administered as tasteless remedies, can, by proper dilution, be made palatable. A small dose of well-diluted acid in properly flavored and sweetened water is often taken with relish. Where we find it necessary to give acids, by adopting this method, protecting the teeth by the use of a tube, much will be done toward popularizing the acids. It is better to give small, often-repeated agreeable doses, and retain the good-will and co-operation of the patient, than lose control of all by the opposite course.

Thus it is easily seen that with ingenuity and tact about all the effects that are to be obtained from the administration of drugs can be obtained without offending the palate. Especially when we have considered the numerous channels through which medicines can be administered other than the mouth will this seem feasible. And before closing I wish to make a plea in this direction. Many nauseating doses are spared by the judicious use of suppositories, by the appropriate use of the oleates, by the proper use of enemata, and by the elegant and prompt effect of the hypodermic.

It will be claimed by some, when prompt action is necessary, that pills and granules and capsules will not be so rapidly absorbed as remedies in solution. Where promptness is the desired effect, the hypodermic syringe is the means *par excellence*, and, by proper use, will accomplish all that is desirable in that direction.

We can summarize, then, the means by which the regular profession can administer, and obtain all the effects of, their remedies without offending the most delicate palate under the following heads:

1st. Administration of the *alkaloids*, *neutral principles*, and other drugs of *small bulk* in *gelatin*- or *sugar*-coated *granules*.

2d. Administration of *solid extracts*, *crude drugs* of *small bulk*, and the various salts in *pills* of *gelatin* or *sugar* and *gelatin capsules*.

3d. Administration of tasteless tinctures and other tasteless liquids alone or mixed in water.

4th. Administration of the *oils*, *oleoresins*, *oleates*, and drugs soluble in oils in *elastic capsules*.

5th. Administration of acids well diluted in sweetened and properly-flavored water.

6th. Administration by hypodermic injection, by suppositories, by enemata, and by inunction.

Thus we have, imperfect though it be, a system of palatable therapeutics. I am far from being *entirely* satisfied with it. I am convinced, however, that it is capable of being gradually developed to perfection. I believe it would be to the interest of our system, unsatisfactory as it at first might appear, if each of us would constitute himself a nucleus for a vigorous reform in this direction.

We cannot with proper dignity attack homœopathy in any other way. We recognize in it an adversary as aggravating as it is utterly devoid of scientific merit. We cannot kill it by fighting it, but we can sink it into insignificance by improving ourselves.

2139 Wabash Ave.

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## *THE CULTIVATION OF COCA.*

By Henry H. Rusby, M.D.

FOR more than two months the writer has been continuously engaged in the study of the coca-plant and its products in the districts of Bolivia which produce the best quality of leaves. The results, which are likely to greatly increase the recently-created interest in the plant, will be published shortly, when his studies shall have been concluded. At the present time I will only discuss a question concerning which speculation is rife, namely, the adaptability of the plant to culture in countries where it is now unknown.

For the details concerning cultivation here presented I am chiefly indebted to Mr. Oscar Lohse, one of the most intelligent cultivators in this country, and proprietor of the Finca of San Antonio, two leagues from the town of Caroica, Yungas.

The district of Caroica may be considered as fitly representing the remainder of Yungas, and Yungas as representing the principal coca districts of this republic. The conditions of soil and climate may be briefly stated. Proceeding eastward from La Paz, itself somewhat more than ten thousand feet* above the sea, for a distance of four or five leagues, we reach the summit of the pass over the easternmost cordillera of the Andes, this cordillera having an average elevation in this immediate district of perhaps sixteen thousand feet. This ridge, always more or less snow-covered, cuts off a large portion of the westward-bound clouds, which are thus either

* I have given altitudes and measurements approximately in English feet. By the Spanish measurements the altitudes are much greater.

precipitated in the form of rain before reaching the summit, or, arriving there, are deposited in the form of snow, and then returned by means of rivulets to the valleys, chiefly of the eastern slope. It should be noted that in Northern Peru and Ecuador this cordillera is higher than here, so that the eastern slope in those regions is more profusely and regularly watered than here. From this pass, had we a direct road, we could travel in half a day, so steep is the descent, to the banks of the Caroica River, having an altitude of only two thousand four hundred feet. When we have descended to six thousand four hundred feet we should meet with our first coca plantations, and after passing the two thousand foot level we should have left them principally or entirely behind. Within this four or five thousand feet, then, lie the cocales of Bolivia. No description can convey a perfect idea of the steepness of this luxuriant slope. Travel, entirely by riding-animals, is extremely difficult. There are only occasional places where we can readily leave the road, and here plantations are established. The hedge of coffee-plants at the roadside proves on examination to be the uppermost row of a plantation; and as we peer down among the shrubs we marvel that any one can preserve his footing while cultivating or collecting the coffee. The scenery is of course magnificent, and of a different type, I should think, from that of any other part of the world. The mountains are too young to have lost, to a great extent, their ragged outline, yet softness is imparted by the richness of the vegetation. We stand among the coca-plants and distinctly see another cocal nearly four thousand feet below us.

As there is no better guide to the agricultural capacities of a country than its native plants, I will mention the characteristic classes. At the pass, with an altitude of about thirteen thousand feet, we have but little vegetation,—this low and mat-like, to escape the cold and the winds. Crossing, soon after, a spur having an elevation of one or two thousand feet less, we meet with several Gentianaceæ, notably a Halenia, believed to be *H. Rothrockii*, Gray, of New Mexico. Here, also, are some shrubs in Acanthaceæ and Bignoniaceæ. At nine thousand feet we begin to find Orchids and Calceolarias, with some small trees in Melastomaceæ. At eight thousand feet we meet with our first tree-ferns; the timber-trees become quite large, and Begonias begin to make their appearance. From this point the vegetation begins to assume a really tropical aspect. We find many species of Calceolaria, Fuchsia, and Amaryllidaceæ, while the variety of orchids and ferns is quite bewildering. At six thousand five hundred feet we see the first palms, and the forest-trees become buttressed giants, staggering under their loads of vines and climbing aroids and ferns, and their branches covered with Bromeliaceæ, orchids, and other parasites. Seventy parasites have been counted upon a single fallen tree.

The cultivated plants of the coca district are coffee, rice, cacao, sugar cane, tobacco, maize, cotton (the arborescent species), sweet potatoes, yuccas, and the ordinary garden vegetables. The principal fruits are oranges, bananas, cocoanuts, lemons (sweet and sour), citrons, grapes, chirimoyas, alligator-pears, tumbas, pomegranates, grenadillas, figs, papayas, lukmas, melons, and pineapples, the last just introduced.

The soil in such a broken country is of course very diversified, ranging from a very light decomposed shale or sandstone to a heavy blue or chiefly yellow clay.

The rainy season begins in October, and continues until May or June. During this time the rains are copious and almost constant. During the succeeding two months there is scarcely a drop of rain, and during the next two there are only occasional showers.

Such are the conditions under which the coca grows in this section.

When we come now to consider the methods of cultivation here adopted, we must be cautious about accepting them as the best, merely because they are generally followed here. It is to be remembered that the Bolivian system of agriculture has not received the attention that it should have had, and that it is very probable that reforms might be introduced in present methods.

Nor is it proper to proceed concerning coca-culture without a few words concerning what is meant by the "best quality" of coca-leaves. To a manufacturing chemist the best quality would mean the quality that would yield the largest percentage of crystallizable cocaine, obtainable in the easiest manner, while the same coca might be considered for domestic consumption as representing one of the lower grades. It is highly probable that the amount of cocaine forms no element in the Indian's estimate of the quality of coca, no more than the percentage of nicotine establishes the quality of a particular grade of tobacco. Coca-leaves are classed in general by the Indians as "hajas dulces" (sweet

leaves) and "hajas amargas" (bitter leaves). The former are made sweet by the abundance of alkaloids other than cocaine. While it is true that a greater abundance of those alkaloids is usually accompanied by a larger percentage of cocaine also, yet the variation in the amount of the latter is not so great as in the former; so that while in the sweet leaves the bitter taste of the cocaine is masked by the presence of the other alkaloids, in the bitter leaves its flavor is the predominant one. The presence, then, of these *sweet alkaloids*, as we may call them, translating the simple and expressive term of the Indians, determines the domestic value of the coca, and all that is known of the best methods of cultivation is based on the production of the highest percentage of these alkaloids. Experience may determine that for manufacturing purposes a very different line of principles of culture should be followed.

I have made a large number of assays tending towards elevations, soils, exposures, seasons, ages of plants, and of leaves, different varieties, wild and domestic, different parts of the plant, and various modes of drying and packing. The results will be embodied in a future monograph, mere passing references being made to them for the present. I have about concluded that the percentage of the sweet alkaloids varies inversely as the amount and continuousness of moisture that the plant receives. Thus, the Peruvian, Ecuadorian, and Brazilian coca, which, as I have stated, is much more copiously and regularly watered than the Bolivian, is markedly inferior, so that Bolivia regularly exports about one-eighth of her crop to those countries. I am inclined to think that the greater breadth and thinness of the northern leaf may be partly due to the greater water-supply and the consequent greater degree of evaporation. Again, the Indian always seeks the coca grown at the higher elevations, where the humidity is much less and more irregular than in the districts along the rivers. We are thus obliged, for reasons to be elaborated in the future, to regard these alkaloids as preserving a sort of a balance of moisture, by which the plant stores up during the wet weather a concentrated supply of water, which may be very slowly yielded up during a time of need.

Having thus chosen a high altitude, the next thing is to select a soil. A rivalry exists between a yellow clay and a hill-side soil rich in vegetable matter. My assays have yielded the best results (as to total alkaloids) from soils of the latter class, and I am inclined to think that those who prefer the former soil do so because it yields a somewhat larger crop.

The ground for the nursery-bed is prepared during the latter part of the dry season by breaking it up very thoroughly to the depth of a foot or more. The fruits mature during the early part of the rainy season, December and January. They are red, and consist of a fleshy outer portion and a shell-like inner portion, which encloses the single seed. These people suppose that the germ cannot escape from the shell if planted in its natural condition, and they have continued for hundreds of years to deposit the seeds as soon as gathered in a shaded place, in layers an inch or more deep, and covered with a thin layer of decaying leaves or similar substance. The heat generated by the decomposition of the fleshy pericarp serves to induce germination, and the embryo bursts from its bony covering. This growth unites them, in from eight to fourteen days, into a solid mass, which is broken up into small pieces and planted in furrows in the nursery. In this process very many of the sprouts are broken off and the plants destroyed. Mr. Lohse has adopted the plan of sowing the seeds broadcast as soon as gathered, and covering with a little earth, or, better, a layer of banana-leaves or other decaying vegetable matter. Germination requires from eight to twelve days longer, but all the plants are saved. In either case a covering of brush or straw must be placed over the nursery, at first only three or four inches above the surface, and elevated to six or seven inches as the plants grow. Usually this elevation is repeated once more.

All this taking place during the rainy season, the plants have reached a good size before the advent of the dry weather, and so do not call for any artificial water-supply. Advantage is taken of the ensuing dry season to clear the land and prepare the ground for the new cocal. On the manner in which this is done depends much of the future well-being of the plants. The ground should be thoroughly powdered to the depth of two, and, if possible, three feet, all roots and large stones being removed. On these steep slopes it is necessary to terrace, the terraces being supported by stone walls, the stones laid dry. The width of the terraces, according to the slope, varies from several feet, with a number of rows of plants, to much less than the height of the wall, only a single row of plants being admissible. It is here generally believed that

shade tends to the production of the best quality of leaves; so the cocales are planted thickly with a small broad-topped leguminous tree related to the St. John's bread, but whose name I cannot at this moment recall. There is no doubt that this is a mistake. I have made repeated comparative assays of shade-grown and sun-grown leaves from adjoining plants, and invariably found the latter much richer in total alkaloids. I judge the custom to have arisen from two considerations. There is, as I have stated, a period of two or three months when the plants receive no rain, and then these trees afford a protection from the fierce heat. Secondly, shade conduces to the production of a large, smooth, beautiful leaf, of elegant color, and thus adds to the *appearance* of the product. The terraces being thus prepared, on the advent of the permanent rainy season the plants, now from eight to twelve inches high, are transplanted, being set from one-half to six inches apart, according to ideas of the haciendero. From this time until the first leaves are picked the greatest care must be taken to keep the soil thoroughly stirred and free from weeds. The plants having been transferred in October or November of one year, the first picking is made in March or April of the second following year, one year and a half from the time of transplanting, or two and one-half from the seeds. In case an insufficient space has been prepared, the remaining plants are often left until the following year, and then transplanted, the operation being much more dangerous to the life of the plants.

The chief danger of picking the leaves earlier than the period indicated above is not the strain upon the vitality of the young plant, as many of the leaves drop of themselves, but because it is almost impossible to avoid breaking off the very tender tips of the twigs, the result being fatal to many plants. Immediately after this first picking, fresh leaves develop with great rapidity, and in July or August of the same year the plant flowers for the first time. The lovely white flowers, if undisturbed, remain for from three to six days; but from the very first they are dislodged by the slightest jar, the corolla falling entire, although it is morphologically polypetalous. The fruit ripens in December and January.

During the first few years the percentage of alkaloid increases rapidly, reaching its maximum at or before the age of ten years. At the age of twenty it begins to diminish, but with extreme slowness, so that the plants are practically in their prime up to the age of thirty-five or forty. It is probable that the decline is then due rather to the exhaustion of the soil than of the vitality of the plant. Fertilization of the soil has never been resorted to. It is probable, as suggested by Mr. Lohse, that as much can be done for the coca in this way as has been done for other plants.

A coca harvest is called a *mita*, an Indian word meaning a division or drawing of lots, and there are from three to five in a year, according to the season. The time of picking is determined solely by the condition of the leaves. When they have become mature they turn yellow if in the dry season, and brown if in the rainy, and within eight days at the outside will fall to the ground and be lost. As soon as the mita is over, the ground is cleared from weeds, and, under an ignorant notion that further cleaning is injurious, is left undisturbed until after the next mita. But Mr. Lohse has tried the plan of keeping the ground clean, with the result, thus far, of receiving the next crop in little more than one-half the time reqûired by his neighbors. No irrigation is resorted to during the dry season. Although it is possible that good might result, at least to the welfare of the plant and the size of the crop, I suspect that after a long time an abundant and steady supply of water would result in a decrease in the amount of alkaloids. Mr. Lohse has tried the experiment of mulching at the end of the wet season with a few inches of banana-leaves or other refuse, with excellent effect upon the plants during the succeeding dry season.

This plant is subject to only two diseases of any importance. The first is taja, which I suppose to be the result of a fungus which attacks the undeveloped leaves and tender twigs. It is said by some to be caused by careless picking, in which the twigs are broken. By others it is said to result from the planting of seeds taken from young plants. The only remedy is to remove and burn the diseased portions. The second disease, if such it can be called, is the ravages of a caterpillar called "ulo," which makes its appearance in December, and destroys the crop so quickly that it admits of no remedy.

The method of picking and drying the coca has been so often and so well described of late that it is not necessary to dwell upon it. Coca-picking is a profession to which the children are trained from a tender age. The leaves are picked singly, both hands being employed with a rapid alternating motion,

which strips a twig in an instant. Great care is taken to avoid breaking the twigs, and the young leaves are not picked. Little sacks are tied about the waist, or the women's aprons are pinned or sewn into the required form. They are then transferred to larger sacks, which must be filled and emptied with great promptness, or the leaves will become heated and turn black.

The price here paid for picking is a Bolivian dollar, equal to about seventy-one cents United States currency, for each thirty pounds, which, when dry, will weigh about twelve pounds.

The leaves are exposed to a hot sun upon a pavement of nicely-fitted flat stones, and stirred occasionally until dry. Under the most favorable conditions the drying is accomplished in about three hours. About the coca place are built the storage- and packing-sheds. These are furnished with very broad doors, and men are in constant attendance to sweep the coca with brush-brooms through these broad portals at the slightest indication of rain. A very few drops of rain are sufficient to decolorize and ruin the sale of the coca, though it is my impression that such decolorization, if produced by but little rain, is no indication of loss of cocaine. During the first few days that the dry coca lies within the storage-sheds it undergoes a slight sweating process.

When I come now to speak of the best methods of packing the coca for export, it is fair to say that nothing definite is known. Such coca as has reached Europe or the United States in good condition has done so purely by accident; for perhaps the very next lot, dried, packed, and shipped as nearly as possible in the same manner, has arrived entirely ruined. I have tried many methods, and as often as I had thought that the secret was discovered my hopes have resulted in disappointment.

As regards the exportation of the culture of coca, the experiment has been tried, I believe, but once. Several years since, Mr. F. L. Steinart, of La Paz, shipped a small quantity of seeds *via* London to Ceylon, and during the past season the first products were shipped to London and sold at a high price. Seeds for export should be exposed for several days to a hot sun, so as to rapidly dry the fleshy exterior, which thus forms a protection to the germ within.

It is my opinion that the coca-plant is adapted for culture in many countries where it is now unknown. Among the countries where it would be well to experiment with it are Guatemala, Mexico, the East and West Indies, India, Southern China, portions of Africa, and possibly of Italy. It is doubtful if it would grow in any portion of the United States. Requiring an average temperature of at least 70°, the only districts at all suited would be Florida and Southern Texas; and it is highly probable that proximity to the sea-coast at so low an altitude would prove fatal. Nor would irrigation prove adequate in those countries possessing a long dry season. The plants must not only have an abundant supply of water at the roots; they must be bathed in a humid atmosphere for the greater portion of the year. But from what I have read of some of the countries above named, I am confident that the plant would there find a congenial home. Jamaica offers especially hopeful conditions.

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## *NOTES ON THE USE OF A FIVE PER CENT. SOLUTION OF BRUCINE.*

By Ralf W. Zeiss, M.D., Philadelphia.

I HAVE arrived at the following conclusions from experiments made with the brucine kindly handed to me by Dr. Mays:

1. I have twice applied the solution, by means of a tuft of cotton on a cotton-holder, to painful *furuncles* of the external auditory canal. In both cases marked relief was noticed in from two to four minutes, which lasted for some hours, when the pain slowly returned as before. Skin in these cases not broken.

2. In cases of painful *suppurative otitis* of the middle ear (some five or six in all) the solution gave *some* relief in *all* cases; very *marked* relief from pain, lasting for a number of hours, in two cases. In these patients the solution was passed on the cotton tuft down to the fundus of the canal, and the raw and often bleeding surface carefully and thoroughly mopped.

3. I have used the brucine solution some scores of times in *sensitive conditions* of the auditory canal to render the use of instruments painless. No record was kept of these, but in about one-half the cases the patients volunteered the statement, "It don't hurt as much now," while in the other half no results of any importance were obtained, sensitiveness being in no way lessened.

4. Brucine, in my hands, has proved most useful in lessening or entirely abolishing the pain and burning caused by *applications* of

iodine, nitrate of silver, sulphate of copper, and the like to the mucous membrane of the throat and nasal passages. I have repeatedly used it in these cases, perhaps nearly fifty times, and in almost every case relief was noticed, and in the majority of the cases pain and irritation were at once overcome.

5. In one or two cases of *burns* the solution has proved valueless.

6. Painted along the line of incision before opening a shallow abscess, it did no good whatever, the patient suffering as much as usual.

7. Used on the external surface of the body, the five per cent. solution has proved of no value whatever in my hands.

Speaking generally, I do not consider the brucine salt equal in its local effects to the muriate of cocaine. Though more lasting, it is much less reliable, nor does it seem to be so readily absorbed.

In some two or three instances, after liberal applications of brucine to the nasal cavities, patients have complained of having felt wildly "nervous" for some hours afterwards, evidently from the strychnine-like effects of the drug. In no other instances were the slightest toxic effects noted, although as much as ℥v of the solution has been repeatedly used in the middle ear and nasal fossæ.

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## *ON ANTIPYRETICS.*

By Geo. J. Ziegler, M.D., Philadelphia.

THE editorial on antipyresis in the October number of the Therapeutic Gazette justly commends the value of the hydrotherapeutic treatment of fevers, with its general salutary effects in reducing bodily temperature and febrile disorder, subverting concomitant abnormal action, and in restoring the normal processes of the vital economy. But, while this hydriatic treatment of fevers is undoubtedly very beneficial, it is generally so inconvenient and troublesome, especially in the form of baths, even in hospitals, where every appliance therefor is at hand, as to greatly restrict its application, and so much the more in the limited resources of individual life and private practice as often to render its regular and frequent employment therein almost impossible, except in children, and by the moderate local application of ice and cold water externally, and the more or less free use thereof internally. Besides, this hydrotherapeutics influences secondary rather than primary abnormities, as it affects the latter only indirectly instead of directly, thereby treating sequents instead of antecedents, or effects rather than causes, whereas some more immediate therapeutic agency is required to counteract or neutralize and resolve the basic abnormity, and subvert the febrile and other morbid sequelæ *ab initio*. Hence the necessity for some more direct, convenient, and effective antipyretic and febrifuge that will suppress the primal aberration and hyperpyrexia *ab origo*, and act in general as a substitute therefor, as well as adjuvant to the hydriatic measures when they are desirable and circumstances are favorable for their employment. Now, in the eager search for new remedies, a large class of powerful antipyretics and febrifuges are strangely overlooked and greatly neglected. These are embodied in those varied sanative and medicinal agents known under the general term of "acids,"—mineral, vegetal, and animal,—most of which are more or less endowed with refrigerant and antifebrile properties, and many with additional specific germicidal, antizymotic, antiseptic, disinfectant, secernent, depurative, and other sanative attributes that render them specially effective in preventing and counteracting pyrexial diseases of the most malignant and destructive, as well as ordinary character, with minor affections of various kinds. Furthermore, besides their general antipyretic and febrifuge power, they differ materially from one another in having some special property adapting them respectively more particularly for the varied states and conditions or individual peculiarities of different diseases, so that by a due appreciation and judicious selection thereof they can severally be more specifically applied to the treatment of the particular form and phase of morbidity to which they are most antagonistic.

Thus, for instance, hydrocyanic acid is a potent, prompt, and persistent antipyretic and febrifuge, speedily allaying irritation, fever, and heat, and causing chilliness and depression. It rapidly reduces excitement of the brain, nervous and muscular, or sensori- and excitomotor system, heart and circulation, with cell, molecular, and vital activity in general, and is especially useful in cerebral, nervous, muscular, and cardiac superexcitability, with hyperæsthesia, irritations, inflammations, fevers, and other disorders of a sthenic type, both general and local. It is, in fact, a powerful and prompt cerebral, nervous, arterial, muscular, molecular, and systemic sedative, but from its

potency must always be exhibited with much care and discretion in small and not too frequent doses, properly diluted, or in the form of cherry-laurel water (aq. lauro-cerasi). As its effects are decided and prolonged, it is better to give small and rather frequent than risk the danger of large doses. Thus, of the dilute acid, beginning with 1 or 2 drops, further diluted; and of the cherry-laurel water, which is liable to vary in strength, from 10 minims to ½ fluidrachm, carefully graduating the quantity and frequency of the dose to the necessities of the case, diminishing or omitting altogether as the desired effect is produced.

Hydrobromic acid is another active sedative antipyretic and febrifuge of similar general applications, but less energetic and depressing than hydrocyanic acid, having besides valuable antizymotic, antiseptic, disinfectant, depurant, and other properties that render it particularly applicable to the treatment of the sthenic forms and stages of zymotic, septic, and nervous fevers, as of variola, scarlatina, and allied malignant and contagious, with irritative, hectic, and other non-infectious diseases.

Thus, in general, these with other sedative acids are more especially indicated in the acute and sthenic than the asthenic types and phases of disease, and may usually be advantageously exhibited, properly differentiated, singly or in conjunction with other compatible remedies, in neuro-sthenic, pyrexial, and inflammatory disorders.

But, as many febrile and allied diseases are essentially asthenic from the beginning, or inherently of an adynamic nature, antipyretics, febrifuges, nervines, and other remedies of a tonic and supporting character are required therein from their inception. Fortunately, there are various acidulous refrigerants and corroborants of this nature, prominent among which are nitric, hydrochloric, nitro-hydrochloric, sulphuric, phosphoric, lactic, citric, and other acids, with their correlative substances, both medicinal and alimentary, a detail of the special properties and applications of which would be too extensive for the limited space of a journal, but which, with collateral, remedial, and sanative agents, I have presented in my work on the "Basic Pathology and Specific Treatment of Diphtheria, Typhoid, Zymotic, Septic, and Allied Diseases." In addition to their positive antipyretic and febrifuge powers, most of these acidulous medicaments are endowed with valuable germicidal, antizymotic, antiseptic, antiperiodic, disinfectant, depurant corroborant, and other active remedial properties; and some of them in various alimentary combinations possess additional nutrient attributes, which render them doubly useful for medicinal and dietetic purposes, and in the preventive as well as curative treatment of febrile and other diseases. They not only reduce the bodily heat and fever, but also counteract the basic and underlying abnormity upon which they are dependent, and, at the same time, some supply a modicum of nourishment, while most of them actively promote digestion and nutrition, circulation, secretion, diuresis, depuration, defecation, and renovation; and some general invigoration and tonicity of body and mind.

Thus correct differentiation and discrimination of the specific differences and applications of these varied, simple, and compound acidulous antipyretics, febrifuges, antizymotics, antiseptics, antiperiodics, germicides, disinfectants, sedatives, stimulants, tonics, and nutrients would greatly diminish the occurrence and activity, as well as simplify and render more positive and successful the curative treatment of those formidable febrile and other maladies that so largely afflict and destroy mankind. Besides, they have in general the desirable advantages of being convenient, cheap, and agreeable, or not unpleasant to take, as well as efficient, points often of vital importance to both physicians and patients.

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## *THE INTERNAL USE OF CHLOROFORM.*

By Davidson Scott, M.D., Spokane Falls, Washington Territory.

THE fear expressed in some quarters regarding the danger of chloroform internally in physiological doses is entirely unfounded. Chloroform in drachm doses is a prompt and safe hypnotic. The physiological effect is sleep, lasting usually about two hours. To get this effect the same precautions are necessary that obtain in procuring natural sleep, viz., the recumbent posture, a darkened chamber, and quietude. Otherwise the subject experiences an unpleasant effect of stimulation, and notably a sense of fulness in the head, with confusion of thought. These unpleasant effects soon pass off, leaving, perhaps, a slight headache.

In the majority of cases the effects of drachm doses are no more unpleasant than those following a glass of spirits in those not

addicted to its use. In 1867 I reported in *The Chicago Med. Examiner* fifty-six cases of intermittent fever in which I had administered chloroform in drachm doses during the cold stage. A summary of this report may be found in the *American Journal of the Medical Sciences*, April, 1868. Since then I have given it to more than five hundred different individuals for different morbid conditions, without unpleasant effects in any case. It is indicated in congestion from any cause, convulsions due to irritation of the end organs, concussion of the brain, delirium tremens, poisoning by strychnine, etc. It is contraindicated in all inflammatory conditions, and should never be administered when nausea or vomiting is present, although no danger will result, but the fumes being regurgitated through the mouth and nostrils, is alarming to timid patients. In the chills designated *congestive* it is *specific*, but may have to be repeated in twenty minutes to half an hour, never oftener in my experience. Infantile convulsions, due to peripheral irritation, it arrests promptly. Many who read these lines will be surprised at the statement that I have frequently administered undiluted chloroform in teaspoonful doses to infants of two and three years of age during the unconsciousness that follows convulsions, sometimes prying the mouth open, or letting it filter through the teeth. When it gathers in the pharynx it promptly produces reflex action, and is invariably swallowed, producing a profound sleep, from which the little patient always awoke without an untoward symptom, and in no instance did it ever fail to arrest the convulsion. Of late years, however, I use nitrite of amyl preferably in such cases.

The following case, which was reported in connection with the administration of chloroform internally in *The Chicago Med. Examiner*, March, 1869, will illustrate the subject perhaps better than anything I might say. In the summer of 1868 I was hastily summoned to the bedside of a lady whom some hours—twelve, I think—previously I had delivered of a child by podalic version, the case having been one of placenta prævia, and found her just emerging from a convulsion,—the twelfth. She was cold, pulseless, bloody foam issuing from the mouth, with very feeble stertorous respiration. Upon the bureau, near the head of the bed, there happened to lay a tablespoon, and having a vial of chloroform in my pocket, I immediately filled this large spoon *full*, and, prying open the set jaws, poured the whole into the mouth. It was immediately swallowed, and almost momentarily after the face flushed, the pulse came up full and bounding, the respiration changed to that of natural sleep, and after two hours' peaceful sleep she awoke with some confusion of thought, but nothing worse, and made a rapid and good recovery. This was the largest amount I ever gave at a single dose.

The following case is anomalous. I give it as a physiological—perhaps I should say pathological—curio. John D., an inebriate, addicted to alcohol when it could be had, but would consume laudanum in ounce libations procured from the apothecary when the barkeepers refused him drink or John's friends failed to "set 'em up." One evening he applied for treatment; he was just on the borderland of delirium tremens. It was at a period when I was experimenting with chloroform. Acting on the premise that less than one fluidounce had never proved fatal, I directed that a teaspoonful should be given in a glass of sweetened water every half-hour till sleep ensued, giving, if necessary, seven doses. If this failed to procure sleep I was to be informed. Next morning I saw John bright and early at work painting a house, that being his trade. Now it so happened that I had confided to the attendant of the night before a four-ounce bottle filled with chloroform. Late that evening John appeared at my office with, "Doctor, I would like this bottle refilled." Greatly surprised, it being the chloroform-bottle, I asked him what he had done with the contents. He replied that he had taken a swallow from the bottle as the occasion demanded during the day, and he regarded it as the "finest treatment" he had ever had. Now, the facts are, this fellow had been given six teaspoonfuls the night before, when falling asleep, the attendant retired, leaving the bottle on the mantel, where it was found by the patient in the morning, with the result as stated. He actually swallowed fully twenty-five fluidrachms of undiluted chloroform within a period of twelve hours, performing a large day's work with more intelligence than he usually manifested, and ate three hearty meals, as I learned from his employer.

To the late Dr. A. P. Merrill, of New York, formerly Professor of Practice in the Memphis Medical College, at Memphis, Tenn., is due the discovery of the power of chloroform in drachm doses over chill and congestion. I think there is little doubt that he was the first to administer this large amount for any pur-

pose. My object in writing this communication is due to the fact that chloroform has become so popular as a tænicide, and the idea of giving it in such small doses as I see reported is absurd to me with the experience I have had with the remedy. I first used chloroform for tapeworm in 1869. It suggested itself to my mind after reading a case reported as being successfully treated by sulphuric ether. Theoretically the remedy is plausible. Without doubt chloroform is rapidly vaporized on reaching the stomach, and diffuses itself along the intestinal canal. In my hands it has not proved a brilliant success in these cases. However, the following plan will be found best if it be decided to give it a trial: Let the patient take a fluidrachm, well mixed in a half-tumbler of sweetened water, before rising in the morning, and followed immediately by a brisk purge. Now let the room be darkened and quietude prevail; he will fall into a pleasant and natural slumber, from which he will awaken in one to two hours refreshed, perhaps not until admonished that his physic is ready to operate. As the remedy is harmless, and not unpleasant, it may be repeated as often as desired.

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## *THE TREATMENT OF VARICOSE VEINS.*

By J. M. Buzzel, M.D.

I NOTICED in the Gazette of November 16 an abstract of an article published in the *British Medical Journal*, by Dr. J. F. Frye, advocating the removal of a section of the varicose vein in varix of the leg.

I believe that I have found a "more excellent way" of treating this very troublesome disease, and I feel disposed to furnish a brief account of the method of operation and treatment which I have practised for forty-eight years in varix of the leg, and the results of the same.

Up to the time of my graduation but little had been done in the treatment of this disease, except to palliate the sufferings of the unfortunate patient by the elastic stocking or bandage and make an effort to heal up the ulcers which usually accompany this affection of the veins. The surgeon was not able from anything he had read or heard to hold out any promise of a cure of this disease.

Attempts for the occlusion, or rather the obliteration, of the diseased veins were made by pins and caustic, because something must be done to pacify the patient and make him reconciled to his lot. In view of this dubious state of surgical science upon this subject, I was led to inquire what was the objective-point to be reached in curing this diseased state of the veins. My conclusion was that the old veins that had, by degrees, in consequence of the thinness of their coats, become greatly dilated and overdistended with blood, the circulation in them growing slower as they grew larger, producing heat and discomfort in the limb, must be exchanged for new ones, the blood in the mean time being returned in the deep-seated veins.

The next question, of course, to be settled was, how was this important metamorphosis to be accomplished? The answer to me was plain. If the occlusion or obliteration of a small section of the veins, as had been the object of those who had inserted pins, ligatures, or made caustic sores, had measurably improved, temporarily, the condition of things,—if a little *occlusion* was good, a complete occlusion must be better, if it could be safely accomplished. And the entire arrest of the circulation in the internal saphenic vein, closing all of its tributary branches below the knee at once, seemed to me to be the way to accomplish this most desirable purpose.

Having heard the venerable surgeon, Prof. R. D. Mussey, M.D., in one of his lectures upon this subject, say that, in his opinion, the operation of ligating the saphenic vein was a feasible one, I was determined the first opportunity I should have to make a trial of its operation. And it was not long after I commenced practice before a very interesting case of varix presented for my treatment.

A Mr. J. M., of Standish, Me., about 45 years old, had been greatly afflicted with varix of the *left* leg, which is the one most commonly affected where only one limb is involved, and upon which there was a large indolent ulcer, as large as the hand, having existed there several years.

I stated to the patient my plan for the cure of such cases. M. was ready to trust his life in my hands. I performed the operation, which I had carefully planned, and which I will soon describe. I placed the patient in a proper position, covered the ulcer upon the leg with simple diachylon plaster, bandaged the limb, and kept the patient confined to his bed about three weeks; when, upon removing the bandage, the aspect of the limb was as natural as the other, the ulcer having healed entirely, and the new and perfect veins showed themselves when the foot was put upon the floor, the old veins being entirely obliterated.

By the use of an elastic stocking, which I always recommend, to prevent the new veins from becoming distended and tortuous like the old ones, he lived some twenty-five years with no return of the disease.

Although I have had several cases with favorable results, I will refer to but one other case, which was, I may say, a bad one.

R. V., an elder in the family of Shakers, at Lebanon, N. Y., about 40 years of age, came to me with varix of the left leg. The veins were extremely large, the saphenic vein, from the knee upward to its emergence into the groin, being as large as a broom-stick.

I stated to the patient what I had done, then several times, and the results. He submitted to the operation and treatment, although warned by a surgeon in a college in the State that it would "kill him." But he lived through the operation, had a new set of veins, and, by the proper support of the leg, he has had no return of the disease. I had a letter from him eight years after the operation, and he reported that he had no varicose veins upon his leg.

I will now, as briefly as I can and make myself understood, describe the operation and treatment. If there are unhealthy *ulcers* upon the affected limb, I endeavor to improve their condition so as to show a healthy state of granulation. I then wash the limb with some antiseptic mixture, latterly the carbolic solution, and apply over the ulcer a diachylon plaster. The next step of the operation is, by the aid of the right thumb and forefinger of an assistant, and of my left, to pinch up the integument directly over the saphenous vein upon the inside of the knee, where it is easily found, and passing a bistoury through the two folds of integument, with the back of the bistoury towards the vein, cutting from within outwards, I make an incision about three-quarters of an inch in length, which will bring the vein plainly into view. I then pass a ligature beneath the vein, taking care not to include the nerve that accompanies the vein, but do not tie the vein in this stage of the proceedings. I then raise the foot as high as convenient and commence the application of a bandage, which I apply closely upon the limb from the toes up to the knee, forcing the return of the blood in the veins as much as possible, with the hands in advance of the bandage. When the bandage has reached the knee, I tie the vein, not so tight as to divide its coats, but simply to arrest the upward movement of the blood in the vein, leaving one branch of the ligature out, and the wound is dressed with plaster. I then keep the foot and leg raised as high as comfortable to the patient, and keep the whole limb wet with cold water with the carbolic acid solution, with the occasional use of the tincture of arnica or lobelia, and paying particular attention to the state of the wound, which to the feel is somewhat tender and slightly inflamed. After the ligature becomes loosened, I cut one branch and remove it, as there is no longer any need of it.

In every case I have had the patient has been comfortable throughout his confinement, having no fever, swelling, or pain. I have given internally, after a few days, aconite, Seidlitz powders, etc., to *prevent* inflammation, fever, etc.

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### *PILOCARPINE IN TOOTHACHE.*

MR. A. P. KURZAKOFF, according to the *Medical Press*, November 4, 1885, states that hypodermic injections of pilocarpine will relieve toothache. A solution of 2 grains of the salt in ½ ounce of distilled water was used, the injection being made into the temporal region on the side of the odontalgia. In two of the cases one-eighth, and in a third case one-quarter, of a grain of the salt was injected. In all the cases pain disappeared permanently in about an hour after the injection; about the same time salivation and perspiration (caused by the drug) also ceased. In one of the cases, in that of a man, æt. 46, with rheumatic periodontitis associated with agonizing earache, the injections (of a quarter of a grain) produced profuse vomiting, with cyanosis, general weakness, and drowsiness, all of which symptoms disappeared in about an hour and a half after taking 20 drops of tincture of valerian. The author thinks that this simple plan of treatment fully deserves a further and more extensive trial.

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### *THE INCOMPATIBILITY OF ANTIPYRIN.*

DR. ECCLES states in the *New York Medical Journal*, October 24, 1885, that he has found that sweet spirits of nitre is incompatible with antipyrin. When he has used antipyrin added to sweet spirits of nitre, the mixture at first is clear and colorless, but becomes green with some hours' standing. Since antipyrin is a coal-tar product, Dr. Eccles believes that the change of color is due to the formation of a green aniline. This incompatibility is worth remembering, since both antipyrin and sweet spirits of nitre are antipyretics, and might be prescribed together.

# The Therapeutic Gazette

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## Leading Articles.

### *TE SALUTAMUS.*

AS this is the first birthday of the THERAPEUTIC GAZETTE since its adoption into the family of its present parentage, it is but right that we should sincerely thank the profession for the support which has been given to us, and acknowledge with humility the many congratulations which we have received concerning the growth of our adopted child.

If permission be granted we would also like to philosophize a little, and to say a few things to our contributors and to our readers concerning the spirit which should possess all of us as therapeutists. Our art of healing is at present far from complete, although the record of the past twenty years is one of which we may well speak with pride. Old remedies have been found to possess new features; new remedies of value have been added to our lists; great generalizations have been determined; knowledge has been perfected in detail; previously unknown territories have been more or less explored; and at the same time a therapeutic momentum has been acquired which must carry forward the profession upon this line of progress with ever accelerating rapidity. Wherever, however, there is in nature excessive vitality and vigor, there is always a tendency to irregular development, to the formation of all kinds of straggling growths, to the production of weeds, and to general rankness. So, it seems to us, it is in therapeutics. We acknowledge that in the present more than at any past time new remedies of no value or of little value are being praised without number and beyond measure, but we recognize in such outrunnings the presence of an excess of vitality. This explanation may be satisfactory to our pride, but the facts remain, and as editors of the leading therapeutic journal of the world we feel that, if ever the hoe and the pruning-knife of criticism were needed in pharmacology, it is at the present moment. Most earnestly would we call the attention of writers of general treatises on therapeutics to the great importance of their not dogmatically asserting as true that which is unproven. The effort should be unceasing to weigh evidence with the greatest care, and there should be an ever present fear of sacrificing truth to an appearance of perfection. Better always is it to leave the therapeutic edifice jagged, uncouth, and unfinished than to put up a superstructure which the first storm shall cast down, and whose ruin shall involve the good with the bad.

The therapeutic observer and the writer of individual papers also at present seem to us to need a caution. Brilliant theories, important discoveries of apparent facts so rapidly attract attention and are so easily made, whilst close observation and permanent results require so much toil and are so often barren in immediate glory, that the temptation to give reins to the imagination comes almost as strongly to the modern physician as did the carnal visions to St. Anthony; but as did St. Anthony, so ought we also to resist even to the death.

The spirit which should rule the minds of all therapeutic co-workers is that of scepticism. Let us believe nothing until it is proven. It can do no harm to wait a little until an alleged fact or a plausible theory is established; but great injury may result from an untrue allegation or a false theory gaining foothold and rooting itself, so that its influence shall continue for years. Possibly scores of children, certainly many lives, have been sacrificed in the last ten or fifteen years to the

theory that the chlorate of potassium yields its oxygen in the blood, and thereby purifies the vital fluid. A theory as baseless as it is ingenious and attractive, but which still has its advocates, and which within a few weeks we saw taught by a learned professor to a gaping crowd of students,—a theory which led in practice to the immoderate use of the chlorate in diphtheria, and no doubt to a notable increase in the death-roll.

Another theory almost as universally believed in and almost as groundless as the one just spoken of is that which attributes the effects of the bromide of potassium upon the nervous system to contraction of the finer blood-vessels, and the consequent production of cerebral and spinal anæmia. How many pages have been written in regard to this theory! What great discourses and imaginings concerning the nature of epilepsy and various other diseases have been built upon it! How it still permeates neurological writings! and yet there never has been a single well-observed fact supporting it. Evolved out of the inner consciousness of the neurological clinician, it has been swallowed by a profession whose gullibility is still marvellous and triumphant.

Some seventeen hundred years ago Galen wrote at the end of his great treatise,—*περι χρειας ταν ἐν ἀνθρωπου σωματι μοριων*,—that his anatomical facts and studies were so many hymns sung before the gods.

What discords of false notes! what pæans of unbridled imagination have these our therapeutic hymns contained! Let us strive that in the future our songs shall be as redolent of cleanly-winnowed truth as they have in the past been heavy with the dust of falsehood.

The scepticism the therapeutist ought to encourage is not one as to the value of drugs in the treatment of disease. It is as to the assertions made concerning new drugs, and as to theories which are brought forward to explain the action of old and new drugs. The editors of the THERAPEUTIC GAZETTE can perhaps best express their appreciation of drugs by an anecdote concerning the late Dr. George B. Wood. This eminent therapeutist was accustomed to say that when any physician came to him and professed lack of faith in the efficacy of medicines, he always replied that this lack of faith must rest upon the physician not having used drugs properly, because the results to be achieved by the proper use of remedial measures are so apparent that they can be seen at once.

### *CHLOROFORM BY THE MOUTH.*

BOTH to the toxicologist and therapeutist the local as well as the constitutional effects of chloroform when given by the mouth are of interest. There can be but little doubt that much of the curative influence of the drug when so administered is the result of the peculiar irritation which it produces in the gastro-intestinal tract; and it is hardly conceivable that in cases of exhaustion or of failure of the circulation the sudden arousing sometimes produced by draughts of chloroform are caused by any direct general or constitutional action. Careful experimentation upon the lower animals, made by various observers, shows that any influence this drug after absorption exerts upon the circulation is one of depression. Under its influence the arterial pressure falls steadily; at no time during the action of the drug is the arterial force increased unless the respiration be affected. Any one who has stimulated a sensitive nerve in an animal whose artery is connected with the manometer must recognize the enormous influence which such stimulation has upon the blood-pressure. The gastro-intestinal tract of man offers an enormous surface upon which are outspread everywhere afferent nerves, and any severe irritation of this surface must have an immediate effect. When the woman who is suffering from faintness has ammonia held to her nostrils the irritating vapors bring about reaction by their influence upon the nerves in the nasal mucous membrane. That the rousing of the circulation is under these circumstances not the result of any absorption of ammonia, and consequent direct stimulation of the heart, is shown by the minute quantity of the ammonia necessary and the rapidity of the effect.

The immediate flushing of the face which is produced in some people by small doses of alcohol is also not the result of a constitutional action of the drug, but of the irritation of the gastric mucous membrane which it causes. This has been frequently verified by the writer in a case which has long been under his care. In this patient two or three teaspoonfuls of wine will produce almost instantaneously a facial coloration which might put to blush that of a boiled lobster. If the wine be freely diluted this congestion of the face does not occur; and if vinegar be taken instead of wine the effect upon the face is precisely as though alcohol had been ingested. Certainly acetic acid, taken in the form of one or two teaspoonfuls of vinegar, has no instan-

taneous direct effect upon the heart or blood-vessels.

The local effects of chloroform are far more severe than are those of alcohol, and it is hardly open to doubt that it is these local effects which produce sudden awakening from a faint. The severity of these effects is revealed by the severe gastritis which almost universally follows poisoning by chloroform given by the mouth; whilst the jaundice which in many of these cases accompanies the gastritis shows that the chloroform penetrates everywhere through the abdominal viscera. In a few cases death has resulted after a lapse of as much as eight days from this secondary gastritis (see *New York Med. Record*, July 11, 1885). After death from chloroform taken by the mouth anatomical evidences of gastro-intestinal inflammation have been very pronounced.

The amount of chloroform that is required to kill when swallowed varies very greatly. Evidently this is in part due to the variability in the rate and completeness of absorption of the drug through the gastro-intestinal mucous membrane. Taylor describes a case in which recovery occurred after ingestion of four ounces; but according to L. Lewin a single drachm has produced death. In our opinion under no circumstances is the practitioner justified in giving by the stomach more than half a drachm at a single dose. The drug meets no indication which cannot be equally well or better met by the less dangerous remedies, and we cannot see that a practitioner is justified in taking the risks. Indeed, we doubt whether chloroform ought to be used at all internally, excepting as a local remedy in cases of gastric or intestinal neuralgia or spasm, or other similar affection. In cases of colic, with or without diarrhœa, and in cases of sudden nervous diarrhœa from intestinal relaxation, it is invaluable; but under these circumstances the dose should not exceed 25 drops, to be repeated *pro re nata*.

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### *ACCIDENTS WITH HYPODERMIC MEDICATION: HYOSCINE, MORPHINE, ELATERIUM.*

THE numerous reports which have been made upon the use of hydrobromate of hyoscine seemed to have settled that it is a drug of very great value, whose especial application is in cases of sleeplessness, combined with great excitement of the cerebral cortex. As yet no case of poisoning has been recorded, but it may be remembered by some of our readers that Dr. Wood, in one of his articles, called attention to the fact that in two cases he had seen evidences of paralysis of the laryngeal nerves, with consequent symptoms of sudden suffocation, under its use. In a recent case which occurred in the practice of Dr. M. O'Hara, of Philadelphia, $\frac{1}{60}$ of a grain administered hypodermically is said to have produced very serious consequences. There was no sleep or dilated pupils, but paralysis of the pharynx, suffusion of the face, loss of power of articulation, fever, with great muscular relaxation, and partial loss of co-ordinating power, lasting for twenty-eight hours. After recovery there was a total lack of remembrance of occurrences which took place during the seven hours following the taking of the medicine.

In the administration of minute doses of medicine the doctor is so entirely at the mercy of the apothecary, and it is so difficult, without expensive chemical analysis, to prove that the solution used had the strength ordered, that there is always a suspicion in cases like the present that more of the alkaloid was injected than was intended. The mere assertions of the druggist must count for nothing, as if he had made a mistake he would probably not be aware of it, and even were he aware of the blunder, to convert knowledge into acknowledgment would hopelessly strain ordinary human nature. It is possible, however, that there may be individuals whose idiosyncrasies are such as to render them highly susceptible to the action of this drug, and that the symptoms were caused by the $\frac{1}{60}$ of a grain. We once injected hypodermically $\frac{1}{6}$ (according to the prescription) of a grain of morphine into the arm of a patient, who fell back, apparently dead, inside of one minute after the time that the piston of the syringe was thrust downward, and who was only saved by long and most assiduous treatment. We have always believed that in this case the drug was thrown directly into a vein, and carried in a concentrated condition to the heart and nerve-centres. The hypodermic administration of remedies is liable to dangers which can only be partially provided against.

We have had detailed to us, by a physician in the United States, a case which occurred in his own practice, which seems worthy of being here noted. For obvious reasons the name of the physician is omitted, but there can be no doubt of the authenticity of the statements. In order to produce vomiting

and purging in a case of severe narcotic poisoning, elaterium was used hypodermically. The injection was followed in the course of a few minutes by free emesis and purging and very severe local irritation, ending in abscess. A few days later the patient was attacked with tetanus, which ran a rapid course to a fatal termination.

In connection with hypodermic injections may be mentioned the necessity, not always appreciated, of keeping the needle absolutely clean. This applies with more force to hospital than to private practice. We have seen patients to whom we were giving daily hypodermic injections without any local trouble, who then went into the hospital, and on a continuance of the treatment suffered from a series of abscesses. These abscesses were attributed by the hospital authorities to the bad state of the constitution, but were really due to septic poisoning from a dirty needle. The hypodermic needle in every hospital should be habitually kept in a strong carbolized oil.

In order to avoid throwing the medicine directly into a vein, the point of the needle should be withdrawn a little after being plunged deeply into the tissue. Do what we may, however, a certain amount of danger accompanies the hypodermic injection. A risk which is not sufficient to interfere with our using the method when there is any distinct call for its employment, but which is too great to warrant that perpetual employment of the syringe that is practised by some physicians.

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### *HYPNONE, THE LATEST HYPNOTIC.*

THE readers of the GAZETTE, who by this time take it for granted that nearly each month presents to the medical world a new antipyretic, anæsthetic, or at least hypnotic, will not be disappointed even by the issue of this number of the GAZETTE. "Hypnone" is the auspicious label of the long-looked-for ideal hypnotic. Dujardin-Beaumetz presented to the Academy of Medicine on the 10th of November his first results of a series of observations made with phenyl-methylacetone, to which drug he gave the name of "hypnone." Popoff, of Warsaw, had previously examined hypnone as to its chemical properties, and ascertained that it was decomposed in the organism into carbonic and benzoic acid, and that it appeared in the urine as a hippurate. Dujardin-Beaumetz found that the drug produced a deep physiological sleep in adults when exhibited in doses ranging from ¾ to 2 drops; he gave it mixed with some glycerin in gelatin-capsules. In alcoholic subjects it acted decidedly better than either paraldehyde or hydrate of chloral. Altogether the drug was tried in nine cases and produced no undesirable secondary symptoms, nor could any intolerance be observed; the breath simply was noted to be unpleasant when the drug evaporated from the pneumonic surfaces. In guinea-pigs subcutaneous injections of 7½ to 15 drops produced a remarkably profound and stupor-like sleep, which gradually assumed a comatose nature, in which, after five to six hours, the animal perished. Dujardin-Beaumetz regards hypnone as a powerful, pure hypnotic, and anticipates the best of success with the new drug.

According to the *Gaz. Hebdomadaire* of November 20, 1885, Dujardin-Beaumetz again emphasized in the Academy the fact that hypnone will act promptly in cases of insomnia depending upon cerebral hyperexcitation, but will prove wholly useless in insomnia caused by pain. A clear and specific indication of this nature is of course much more apt to win confidence than the *à tout cas* eulogies of new remedies to which we have been of late accustomed, especially from German quarters. The claim that hypnone is actually well borne by the stomach would, if found to be a just one, of course materially enhance the value of the drug, as the principal objection to all ordinarily-employed hypnotics is less a want of activity than their ill effects on the digestive tract.

The drug itself is by no means a discovery of a very recent period, as Friedel had extracted it already in 1857 from the products of distillation of benzoate and acetate of calcium. He represented the drug by the formula of $C_6H_5-CO-CH_3$. It crystallizes in large flakes, becomes fusible at 15° (C.), boils at 98° (C.), and has a density of 1032. Its taste is hot, and its odor resembles that of bitter almonds and oil of wintergreen together.

Four to ten drops taken at once are, according to Dujardin-Beaumetz's statement, sufficient to produce a refreshing and sufficiently long sleep. It is best taken in either of two preparations, as advised by Pierre Vigier, viz., a syrup or elixir. The syrup of hypnone is prepared as follows:

℞ Hypnone, gtt. i;
Alcohol (90°), ♏xvi;
Syr. aurant. flor., ♏lxxx;
Syr. lauro-cerasi, ♏xvi.

The drop of hypnone is put in the alcohol,

the syrups are then added, and the whole liquid is well stirred. A child would have to take at least double the quantity of the above mixture so as to get 2 or 3 drops, while an adult would require at least four such doses.

The elixir is prepared as follows:

℞ Hypnone, gtt. i;
Alcohol (60°),
Spir. menth. pip., aā ℥l.
To be prepared in the same manner as the syrup.

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### *REMARKS ON ALCOHOLISM.*

WE hear a good deal in this country of the untoward effects which alcohol in any form is supposed to exert on the human economy, but rarely ever a plea in its favor. That even an habitual use of alcoholics under certain conditions—aside of medicinal alcoholic preparations—may exert a favorable influence on nutrition few therapeutists would venture to deny. To the poor workingmen, who lack the advantages of a proper and regular diet, who, in scanty clothing, are exposed to the various changes of temperature and season, alcohol forms an indisputable nutritive factor of the highest type; it is, in other words, an irreplaceable and necessary article of diet for the working-classes. The question of excesses and their consequences belongs only partly to the régime of the therapeutist,—viz., as far as the effects of alcoholic excesses on the body are concerned,—while their moral and social sequelæ ought in no way concern the therapeutic investigator.

Lanceraux, of Paris, recently delivered an interesting lecture on the subject before the Parisian Academy, which, as seen in the report of the *Gazette Hebdomadaire* of November 20, 1885, brings this subject into fresh prominence.

Alcohol seems to have a direct power to shorten the duration of human life; at least Lanceraux, who has studied this subject for about twenty years with great care, has come to this conclusion. "Fifty or sixty years," this author says, "is the highest age ever attained by alcoholists."

In the first place, it would not be an easy matter nowadays to exactly define the word alcoholist. Some of our readers might differ in this respect, and say it is easy enough to define an alcoholist. An alcoholist is a person, they would say, who daily or habitually, at least for a certain protracted and usually continuous period of life, is or has been indulging in such excesses of alcohol as to have suffered physical and moral losses. A closer investigation, however, will soon convince us that this definition—which, by the way, we actually encountered some time ago in a medical journal—is exceedingly unsatisfactory, nay, actually improper. We venture to say that it would suit four-fifths of all students and teachers of a French or German university. As peculiar as this statement might appear on first sight, any one familiar with the usages of the Continental academic circles will readily confirm it. Hence, we repeat, Lanceraux's expression, "alcoholist," is an exceedingly vague one, and scarcely admits of a strict and satisfactory definition. If, based on statistics, this author assigns to alcoholists no higher duration of life than fifty or sixty, he would find some noteworthy exceptions in our Philadelphia Hospital,—the pauper department,—where we could introduce to him a number of bibulous veterans approaching closely a centenary. Our French author has also evidently forgotten Homer's account of the most venerable of all tipplers, Nestor, who attained an age of treble an ordinary duration. Fifty to sixty years is by no means a bad average; but, on the contrary, a very acceptable one, and Lanceraux will not be able to frighten many drinkers by such statistical facts. It would be interesting to know how many tubercular subjects, who at the same time indulged in the cup, attained the age of fifty or sixty years. If Lanceraux could count up even a moderate number among his statistical material, it would be a strong indication for every otherwise doomed tubercular person to try alcoholism with the view of prolonging life.

Lanceraux has paid special attention to the comparative physiological results of the various alcoholic beverages, and pronounces some very sensible, though to many Americans occasionally surprising, axioms. "Cider, beer, and even wine, if properly prepared and not adulterated, are in every respect," says our author, "wholesome beverages, the use of which ought to be encouraged." He admits, however, that wine is capable to lead to a man's social ruin, though he does not refer to any possible deleterious effects on the constitution. Here our author makes the interesting statement that the craving for wine is readily transmissible to the progeny. We doubt, however, that this theory, at least in such unqualified a condition, can be accepted. As to the actual commercial spirits, such as brandy, whiskey, rum, gin, etc., Lanceraux asserts that the results of excesses do not limit

themselves to the drinking persons exclusively, but are, as we readily accept, extended to their offspring. The pathological phenomena subsequent to alcoholic excesses are principally alterations of sensibility, of movement, of the vasomotric and the intellectual functions. In the offspring of alcoholic indulgents it is exceedingly common to find nutritive deficiencies and certain peculiar constitutional conditions which prove a ready predisposition to tuberculosis. Lanceraux concludes his interesting essay by advancing certain pertinent propositions, which might be suitable for France, but would be rather out of place in America. He recommends absolute liberty for the sale of every alcoholic beverage, a strict superintendence of the sold material, repeated official examination of them, an immensely higher duty on all alcoholic spirits, the necessity of a strictly moral character of every vendor, and the distribution of prizes for the preparation of the most wholesome alcoholic beverages.

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### *IODOL, A NEW ANTISEPTIC.*

IODOL ($C_4I_4NH$) was first produced synthetically in 1883, by Messrs. Ciamiccan and Dennstedt, by the action of iodine on pyroll ($C_4H_4NH$) in the presence of caustic potash. Its reaction is slightly acid, and it is free from the penetrating and disagreeable odor of iodoform. It exists in the form of a brown amorphous powder, insoluble in water, slightly soluble in cold alcohol, and readily soluble in warm alcohol, ether, and acetic acid, and in oil. It contains eighty per cent. of iodine. Iodol may be warmed to 100° C. without undergoing decomposition. At higher temperatures iodine vapor is given off, and a carbonaceous mass remains. From its alcoholic solutions it is precipitated by water, but not by glycerin. When warmed with nitric acid, the alcohol solution turns bright red, and in sulphuric acid dissolves with the formation of a green color. Clinical experiments made with this new product are as yet too incomplete to enable us to form any decisive opinion as to its value. According to Dr. Mazzoni, it is an even more powerful antiseptic than iodoform, is entirely free from the odor of iodoform, and has not yet produced any symptoms of poisoning. It appears also to act as a local anæsthetic, and favors granulation. Applied locally to chancroids, iodol produces the same effect as salicylic acid. A one hundredth per cent. solution in oil injected under the skin produces no reaction, while the passage of iodine into the urine has been determined. Administered internally in doses of 2 grains daily, the iodol is said not to produce the slightest trace of intestinal irritation.

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### *TREATMENT OF HYSTERIA IN CHILDREN.*

ALTHOUGH numerous affections of the infantile phases of life, even those of the nervous system, assume, without therapeutic interference, in the course of time, a very benign type and disappear wholly through nature's own restorative and recuperative power, the physician is nevertheless frequently enabled to exert a direct favorable influence upon the morbid process. The numerous types of nervous hyperexcitation occurring in children, unless a grave hereditary predisposition exists, allow usually of a favorable prognosis, though their frequently observed rebellious nature, and the possible danger of establishing a habit, call for a careful medical treatment. We find in the *Wien. Med. Wochenschrift* of November 14 an instructive paper by Dr. Herz on the treatment of hysteria in children, which is worthy of a brief representation in the GAZETTE. Omitting the author's remarks on the etiology and pathology of the affection, we shall simply review his ideas of treatment.

The first and most important indication in infantile hysteria is the strengthening and rehabilitation of the weakened organism, and especially of the central nervous system, by the various dietetic, hygienic, and medicinal measures. Next in importance stands the tranquillization of the physical and mental excitation, either by direct medication or by appropriate psychical influences. The last factor is often obtained by an apparent disregard of the affection, actual or only threatened removal of the child from its domestic surroundings. There are cases on record in which an actually curative effect was gained by various threats, such as to cut off the hair, burn the spine, or perform an operation. These means have been found to be especially efficient when the hysteria resulted not primarily, but on account of the child's association with other hysterical children.*

Anæmia and chlorosis, whenever they exist in an hysterical child, as is so often the case,

* This singular mode of acquiring the hysterical habit has also been observed in the Hospital of the University of Pennsylvania some four years ago.

of course have to be treated by the well-known measures.

Various authors, especially Jacobi, of New York, have lately called attention to the rôle that masturbation in either sex plays in the etiology of hysteria. It is hence necessary to see that this nefarious practice is checked, if found to exist, and rendered as nearly inexecutable as possible by appropriate means. As various sources of irritation emanating from the genital organs, such as phimosis, the aggregation of smegma under the prepuce, and in girls an elongated clitoris, often lead to masturbation, the genital organs should receive a careful examination and eventual treatment. Painting the vagina twice daily with a ten per cent. solution of cocaine has been found to be an able agency in subduing the hyperirritation of the sexual organs in girls accustomed to practise masturbation.

As to the direct therapeutic treatment of hysteria in children, our author agrees with Henoch, the acknowledged highest authority on children's diseases, that there is no specific remedy for it. Henoch prefers the hydrate of chloral to all other medicines, though he regards morphine as almost equally valuable. The former he prescribes in 0.5 to 1.00 doses (7½ to 15 grains); the latter, both internally and hypodermically, in 0.005 to 0.01 doses ($\frac{1}{12}$ to $\frac{1}{6}$ grain). Inhalations of chloroform, though ordinarily exerting only a transient salutary influence, will be found requisite in the occasional paroxysms involving the laryngeal organs. Arsenic and quinine are highly prized by some practitioners, but they possess likewise no constant value. In view of the so frequently underlying anæmic base, small doses of iron and arsenic, continued systematically for a long period, will invariably be found useful. Warm baths, applied frequently, and lasting fifteen to thirty minutes, fresh air, and nourishing food, are always highly commendable in every case.

As especial sedatives of the overexcited nervous system, the bromides of potassium and ammonia and belladonna have always been held in high repute. A combination of bromide of potassium and chloral hydrate appears to act especially well. It is advisable to give 15 grains of bromide of potassium in the morning and afternoon, and 7 grains of chloral hydrate at night, and to combine later both remedies, as follows:

℞ Chloral. hydrat., gr. xv;
Pot. brom., gr. xxx;
Aq. dest., ℥iii. M.
S.—Two teaspoonfuls every two hours.

After continuing this medication for some time, the following combination of arsenic and iron recommends itself:

℞ Liq. pot. arsenit., gtt. xv;
Ferri ox. hydr., ℥i. M.
S.—A teaspoonful twice a day.

Later the iron is suspended and the arsenic retained alone. Politzer, of Vienna, regards the hydrobromate and bihydrobromate of iron as two very valuable preparations in the hysteria of children, and exhibits them in doses of 4 to 7 grains three to four times daily. The same therapeutist recommends also the tincture of belladonna, 3 drops *pro die*, gradually increasing the dose up to 5 drops, and then gradually decreasing again.

The application of cold baths, and even of electricity, cannot claim to have produced any satisfactory results.

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## *TREATMENT OF SYPHILIS BY SULPHUROUS WATERS.*

BOTH the profession and the laity are at the present day fully aware of the fact that the drug-store is by no means the only source and medium of alleviating or curing diseases. The high therapeutic value of such agents as air, light, and water, formerly almost wholly overlooked, is being more and more understood and appreciated. Though the numerous medicinal uses of simple water are as highly prized by the American practitioner as by his European colleagues, it seems to us, as we have repeatedly suggested, that the thermal waters have hitherto in this country not received the full attention to which they are entitled. The paper of Dr. Doit (appearing in the *Gaz. des Hôpitaux*, October 24, 1885), treating of the action of sulphurous waters in syphilis, is all the more worthy of our attention as it refers to an affection the therapeutics of which are far from being satisfactory. The following *résumé* comprises the principal conclusions of Doit's paper:

1. The sulphurous waters can, under certain conditions (to be referred to later), aggravate the syphilitic troubles.

2. They must ordinarily, however, be regarded as curative of the affection.

3. They serve to distinguish syphilitic from other affections by their therapeutic results.

4. They expose latent syphilis.

5. They assist in the differential diagnosis of simple and syphilitic cachexia.

6. They prevent mercurial accidents.

7. They assist the curative effects of especial syphilitic remedies.

8. They are an excellent agent of proof whether or not a syphilitic individual is cured.

The physiological action of sulphurous waters (applied in form of potions, baths, or douches) consists chiefly in a vigorous excitation of the nutritive and absorbent organs of the economy, thus inducing not only a heightened tone of the digestive functions and increasing the resistance of the organism against the specific etiological entities (Lustgarten's bacilli?), but allowing also of a ready elimination of deposited foreign matter.

The aggravation of syphilitic troubles, mentioned above, is only an exceptional phenomenon, and occurs in persons who, while undergoing a thermal treatment, contract syphilis. The syphilitic cell proliferation is then found to be sustained, and even favored, and the indurations noted to progress speedily. In cases where chancres make their appearance the ulceration is likewise found to increase if the use of the water is persisted in.

Too active or too protracted an application of the sulphurous water may also aggravate the secondary symptoms.

The ingestion of mercurial salts continued, as it is often the case, for a year or longer, though favoring the reabsorption of the deposited matters, is very apt to prove a serious obstacle to the parenchymatous tissues by forming mercurial albuminates. The sulphurous waters will then render these products fluid, and make them enter the circulatory channels. At the same time they thus restore to the mercury its curative effects, and allow of its elimination from the system.

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### *A PECULIAR PHENOMENON IN CEREBRAL, AND ESPECIALLY IN MENINGITIC, AFFECTIONS.*

WHILE presenting a meningitic patient to the class on the 1st of December, Prof. Henoch, of the Berlin University, called attention to a peculiar symptom almost invariably observable in cerebral, and especially in meningitic, affections, which, on account of its diagnostic value, deserves to be remembered. The patient, on being examined, did not present any muscular contraction in either the legs or arms, but if the thigh was flexed at right angles to the abdomen, great muscular rigidity and contractions at once set in, which prevented the part from being extended. The same phenomenon, though not so conspicuously, could be noted in the arm. This peculiar condition, Henoch said, pointed invariably to a cerebral affection, and possessed an especial value if the meningitic lesions were in the initiatory stage and presented few or no other symptoms.

Examining the literature of this noteworthy phenomenon, we find in the *Berl. Klinische Wochenschrift* of November 23, 1885, that Dr. W. Kernig, of St. Petersburg, was the first to describe this symptom, and to attempt to furnish a rational explanation of it. This author observed the stated symptom in fifteen cases of inflammation of the pia mater, thirteen cases of which were epidemic cerebrospinal meningitis, one a tubercular and one a purulent meningitis. Besides, he noted the same occurrence in six other cases, viz.: bloody extravasations of the cerebrum and the meningeal membranes, pachy- and leptomeningitis, after thrombosis of the transverse sinus. The symptom appeared in the beginning of the several affections, lasted during the entire course of the disease, and was even demonstrable after reconvalescence had set in.

We likewise find that Dr. Ed. Bull, of Christiania, observed this contraction symptom in three cases, one of which was a tubercular meningitis, the second a cerebral tumor, and the third a thrombosis of the transverse sinus.

An explanation of this singular phenomenon appears not easy, though it is evident that the contraction must be classed among the neuropathic spastic appearances. Its origin seems central, though a peripheral reflex influence may also participate in its causative agencies.

Examining in normal individuals the extended knee-joint, if the hip-joint is kept at the same time in a flexed position, we find that a perfect flexion of the knee is usually only possible if the angle between thigh and abdomen amounts to but little less than 90°. If, on the contrary, the thigh is flexed strongly towards the abdomen, forming an acute angle, the knee-joint cannot be made to form an angle of 180°; the knee forms an obtuse angle, and a further flexion is prevented by the tension of the muscles on the back of the thigh. These remarks are not superfluous, as they show that under normal conditions a similar contraction occurs, which of course ought not to be mistaken for a symptom of meningitis. To avoid errors, it is best to bend the knee-joint at an angle of 90°, which is most appropriately effected by

making the patient sit on the margin of the bed.

### *HOW OUGHT "ANTIPYRIN" TO BE SPELT?*

THE name of "antipyrin" is, we believe, uniformly spelled in the German journals "antipyr*in*," whilst the English, and probably most of the American, journals spell it with the termination of "*ine*." For the purposes of correct nomenclature it is important that some decision should be reached as to what really is correct in the matter. To do this it is essential that the chemistry of it be understood, and we therefore give a brief abstract of such chemistry.

Di-methyloxyquinizin, or di-methyloxy*chinizin* (German), is prepared from methyloxyquinizin, the formula of the latter being $C_{10}H_{10}N_2O$.

Di-methyloxyquinizin, or antipyrin, according to its formula, is two molecules of methyloxyquinizin minus two atoms of hydrogen, as

$$\underset{\text{Methyloxyquinizin.}}{2C_{10}H_{10}N_2O} - 2H = \underset{\text{Di-methyloxyquinizin, or antipyrin.}}{C_{20}H_{18}N_4O_2}.$$

Di-methyloxyquinizin possesses most of the chemical properties of methyloxyquinizin. It is chemically a base, and also an acid. Its acid-salts are destroyed by the action of water. From an alkaline solution it is precipitated by carbon di-oxide ($CO_2$). Ferric chloride produces with it in solution a deep red coloration, and will show its presence down to the $\frac{1}{100000}$ part. In dilute solution of antipyrin, nitrous acid produces a bluish-green color, delicate to the $\frac{1}{10000}$ part. In concentrated solution of the substance nitrous acid causes the formation of green crystals. These reactions depend upon the formation of iso-nitroso-antipyrin = $C_{11}H_{11}N_3O_2$.

A study of the chemistry of antipyrin shows that there really is a room for doubt as to what the nomenclature should be. It is well known that the termination "ine" is used in the British and United States Pharmacopœias to name an alkaloid. From one point of view antipyrin is an alkaloid, and deserves therefore the termination "ine." On the other hand, it is also an acid, and the termination "ine" is repulsive to its nature: scientifically here is a dilemma. It is important to decide whether this creature is fish or fowl, but it must be remembered that antipyrin is a proprietary medicine, since it is a chemical compound whose discoverer has patented it and in doing so has named it. Under these circumstances, when there is a doubt as to the scientific accuracy, it seems to us that the name should be spelt as the discoverer himself spells it, and in the original article it was spelled "in." We therefore think that "antipyrin" is more correct than "antipyrine," and shall endeavor to spell it hereafter in this journal "in." Only, however, when the seal of authority is given by the United States Pharmacopœia either to "in" or "ine" can the point be considered definitely settled. Whichever way the learned men who preside over the pharmaceutical destinies of the United States decide, we will bow with due submission.

### *VACCINATION.*

THE relation of the number of vaccinia pustules to the protective influence of the vaccination has recently been made the subject of elaborate study by a German Commission, with results which are so important that we hope our readers will give them their due weight. The almost universal custom in this country is to vaccinate in a single place, but the Commission came to the conclusion that two is the minimum number of pustules which ought to be made in a protective vaccination, and some of the members affirmed that three is the least proper number. Dr. R. Koch, of the Stockwell Hospital, found that out of seven hundred and three smallpox patients, of those having no scars there died 47 per cent.; poor scars 25 per cent.; one good scar 5.3 per cent.; two good scars 4.2 per cent.; three good scars 3.3 per cent.; four or more good scars 1.1 per cent. He believes that the protective power of vaccination is in direct relation to the number of vaccinia pustules. It has been an American custom to vaccinate upon the arm, and we well remember the late Prof. Pepper telling in his lectures how that a baby, throwing its arm suddenly, knocked the charged lancet out of his hand, when, as ill luck would have it, the point struck the end of the little nose, and of course the vaccination took at that place. The infant grew to be a Philadelphia belle, who to her dying day never forgave the doctor for having put the seal of his protective goodness on the end of her nose. There is no sense in disfiguring the arm with a vaccination-mark. According to our opinion, vaccination should always be practised in the upper portion of the leg or the lower part of the thigh, and, in the light of the German researches, there should be at least three insertions; probably it would be better to utilize both legs.

### *A NEW AMERICAN SCIENTIFIC PUBLICATION.*

FIRST-CLASS original researches in scientific medicine are so rare in America that the advent of a new series of publications seems to us worthy of editorial notice. We have looked over, with great pleasure and pride, the studies from the laboratory of physiological chemistry of the Sheffield Scientific School of Yale College, recently put forth under the supervision of Prof. R. H. Chittenden. Such of the articles as have direct bearing upon therapeutic problems will be noticed separately in the department of Progress, and therefore no analysis of the volume is here required. It does seem right, however, to congratulate Prof. Chittenden in being so placed that he is able not only to obtain time for research, but a definite channel of publication, and also to congratulate Yale College on having found a professor who is both able and willing to contribute original matter of great value to the world's store of scientific knowledge.

### *BACILLI IN LAUDANUM.*

THE bacillus-craze has slain another Spanish victim. Dr. Don G. Puerta (*El Siglo Medico*, No. viii. 85, p. 578) has detected bacilli, which look exactly like Koch's cholera-bacilli, in various specimens of tincture of opium. The microbes showed a distinct motion, and appeared especially numerous in the precipitate on the sides and bottom of the vessel.

We do not see anything remarkable in the fact that a vegetable infusion of long standing should show fungi and microbic life; but possibly Dr. Puerta thinks he has discovered the true specific germs of cholera; if so, he will have to fight it out with Koch and Pettenkofer: or can it be that the bacilli are the cause of the *vis dormativa* of opium?

### *DR. ROSE'S PAPER ON ANTISEPTICS.*

ATTENTION has been called to the fact that Dr. Rose, in his paper published in our November issue entitled "Some Remarks on Antiseptics," etc., speaks of a three per cent. solution when the ingredients evidently make a one and a half per cent. solution. Dr. Rose informs us, in response to our query, that the proportions are correct, but that he fell into the mistake of calling the solution a three per cent. instead of a one and a half per cent. by following Von Bruns, who, employing the same formula, termed it a three per cent. instead of a one and a half per cent. solution.

## Reports on Therapeutic Progress.

### *TREATMENT OF CHRONIC GONORRHŒA.*

The cure of a chronic gonorrhœa is so difficult and rare that the affection is almost regarded as an opprobrium of the profession. There are men who are troubled by the "morning-drop" for years in spite of every known medication. An especial danger of the chronic gonorrhœa is its proneness to resume an acute nature. Family disturbances are not infrequently caused by the presence of this affection in the husband, on account of the indisposition of the latter to fulfil his marital obligations. We agree with Dr. Caspar, of Berlin, in blaming not so much the lack of efficiency of the usually employed medication as its improper application. Dr. Caspar's essay on the subject, appearing in the *Berliner Klinische Wochen.* of December 7, 1885, contains some instructive suggestions which invite our interest.

Examining the anatomical relations of the parts implicated in gonorrhœa, we find the male urethra to be a tube of fifteen to eighteen ctm. long, which is so materially different in its various portions that it is *a priori* improper to designate the affection of every portion collectively as gonorrhœa. The pars membrana and prostatica ought to be as strictly separated as is the cervix uteri from the fundus. An inflammation of the pars spongiosa need not necessarily affect the pars membrana, and *vice versa*. Most chronic gonorrhœal affections are situated in the bulb, or in the border-lines between the bulb and the pars membrana. Of one hundred callous strictures, about seventy occur in the stated regions, twenty in the fossa navicularis, and ten only on other localities of the pars spongiosa. These are the favorite seats of chronic gonorrhœa, though, of course, we occasionally find a gonorrhœa in the posterior portion of the urethra. Still, these are exceptional cases. We have, hence, to deal with a gonorrhœa which is either an anterior one, an anterior and posterior one, or a posterior one solely.

Most of the ordinarily-employed therapeutic interferences in gonorrhœa are useless. This is especially true of the inevitable injection, which does not go beyond the musculus com-

pressor unless an inordinate pressure is used. When the liquid impinges on this sensitive region the musculus compressor closes the urethra by reflex action, and forbids the entrance of the liquid beyond. The mere manipulation of drawing the hand from the meatus to the musculus compressor upward does not remove the spasm of the urethra, as has been asserted by some authors.

The most important matter is to decide whether the gonorrhœa is an anterior or a posterior one, which can be readily done by noting the behavior of a fluid injected into the urethra by means of a catheter. If the fluid flows out from the sides of the catheter, we know that the point of the catheter rests before the musculus compressor; if the fluid is neither ejected from the sides nor from the mouth of the catheter, we can be assured that the point of the catheter rests in the posterior portion of the urethra. But if the fluid returns directly by the mouth of the catheter, we know that its point rests in the bladder. This recognition is, of course, of the highest practical importance. We draw, hence, the following conclusions: Everything that collects in front of the musculus compressor returns by the urethral orifice; everything that collects in the posterior urethra flows in the bladder, on account of the inferiority of the internal sphincter muscle regarding the musculus compressor. This will suffice to determine the differential diagnosis between an anterior and posterior gonorrhœa. If the lips of the urethral orifice are glued together, or a few drops are noted in front of it, or if the clothing shows pus-spots, we can be reasonably certain that the affection is situated in front of the bulb. If these conditions are absent the correct diagnosis is less easy. Often the patients complain of a certain prickling or burning sensation on a certain circumscribed region of the urethra, which of course is then to be regarded as the seat of the gonorrhœa. At other times we succeed by examining the urethra with the button-sound and marking the sensitive spot. If a frequent desire to urinate should be found to exist, we can conclude that we deal with a posterior gonorrhœa. If alongside of this desire to urinate frequently pus-drops appear on the meatus, or its lips are glued together, or pus-spots are found on the clothing, we probably have an anterior and posterior gonorrhœa combined, although the absence of the stated desire does not justify the assumption that there is no posterior gonorrhœa existing in a given case. In the acute posterior gonorrhœa we find invariably the desire to urinate frequently, while in the chronic form this symptom is often absent. The endoscope occasions necessarily so much pain that its employment is not advisable.

The following method of arriving at the proper diagnosis is preferable: The patient, after having not urinated for five or six hours, is asked to urinate into two glasses. If the first portion of the urine has a flocculent appearance, while the second remains clear, we have to deal with an anterior gonorrhœa; if, however, both portions are turbid, we have a posterior gonorrhœa. These symptoms, however, have a diagnostic value only in cases with a considerable secretion. In these cases we are, besides, certain to find the drop on the orifice, the gluing together of the lips of the meatus, and the pus spots on the clothing, if the gonorrhœa be an anterior one. Likewise would a considerable secretion in the posterior urethra, by flowing into the bladder and rendering all the urine turbid, make itself distinctly known. If, however, the secretion is so small that it could not reach the meatus nor the bladder respectively, we would have the following results:

1. In both cases we would find no traces of the catarrh on the urethral orifice.

2. In both cases the first portion of the urine would be flocculent, as the secretions are rolled up, as it were, by the first portion of the urine, and driven out of the urethra, no matter in which section of the urethra these secretions are situated.

3. In both cases the second portion of the urine will be clear.

In most cases, however, the mentioned method suffices to arrive at the proper diagnosis.

The difference between a cystitis and a posterior gonorrhœa is easy enough. In both affections both portions of the urine are turbid, but in posterior gonorrhœa the first portion is necessarily more turbid than the second one, while in cystitis just the reverse condition takes place. This latter fact is brought about by the pus settling according to the law of gravitation in the deepest portion of the bladder, and being ejected only by the last portion of the urine.

Basing on these views, Ultzmann constructed his well-known instruments, which are usually employed with great success.

If, however, a stricture has been forming or is about to form, the named instruments will be found to be insufficient.

It is well known that the gonorrhœal inflammation in contradistinction of à urethritis does not limit itself to the mucous membrane of the urethra, but enters the submucous tissues, the corpora cavernosa, and muscles. The product of this inflammation is a cellular infiltration of the affected parts, which leads to cicatricial tissue, and forms a stricture. At the same time epithelial cells are being constantly formed on the mucous membrane, the death and exfoliation of which furnish the material for the secretion of the chronic gonorrhœa. The glands and lacunæ Morgagni, and even Littré's glands, participate in the morbid process. Dittel regards the characteristic gonorrhœal threads and the goutte militaire as the product of the catarrh of Littré's glands and of the sinus Morgagni. We thus gain the conviction that even in absence of an actually existing stricture the entire gonorrhœal process must be regarded as the forming stage of a stricture, or, as Otis calls it, a stricture of a wide calibre. At the same time we can now understand that astringent and antigonococcic medicines cannot cure a gonorrhœa.

A radical cure must combine means to eliminate the cellular infiltration and to heal the catarrh. Hence the so-called progressive sound-treatment proved successful in many cases, and Unna's method, to employ bougies invested with a soluble medical coating, initiated a new and thoroughly satisfactory era for the treatment of gonorrhœa. The modification of Unna's bougies, introduced by Dr. Caspar, of Berlin, will be certain to prove a great improvement, and ought to receive a careful trial with us. Caspar constructed a sound of German silver having numerous canals on its body. The sound is slightly conical, and twenty-five cc. long. It usually has about six of the stated canals, which are of a depth of one and a half mm., and flatten off toward their anterior portion, and are wholly absent at a distance of five cc. from the point of entrance. (The instrument is manufactured by W. Tasch, Berlin, Schlossfreiheit.) These sounds are invested with an ointment-mass, which in a melted condition is poured into the canals, where it soon grows solid.

As ointment-mass the following recommends itself:

Cacao, 100 parts;
Cer. flav., 2–5 parts;
Argent. nitr., 1 part;
Bals. Peruv., 2 parts.

A three per cent. resorcine-ointment might also be used, but it is in no way superior to the above mass. The *modus operandi* is as follows: Two teaspoonfuls of this mass are placed in an evaporating vessel having a mouth, and warmed over a flame slowly and carefully. The vessel ought not to attain a degree of warmth which prevents it from being touched by the hand. After the mass has melted, the canals are filled with it and allowed to solidify. The instrument must be thoroughly round and smooth. The anterior smooth part is to be anointed with vaseline in order to allow of a painless and easy entrance into the urethra. The instrument guarantees that the medicine reaches the exact locality on which it is needed. The sound passes beyond the stricture, and the ointment melts at the temperature of the urethra in course of a few minutes, and can thoroughly medicate the affected portion.

Ten to twenty applications are, according to Caspar's statement, usually sufficient to cure even an obstinate case of chronic gonorrhœa. Thirty of the most rebellious gonorrhœal affections were cured by him permanently, although fourteen of them had lasted over six months, and six over one year.

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### *POISONING BY HOMŒOPATHIC TINCTURE OF BRYONIA.*

Dr. Craig Dixson reports in the *Australasian Medical Gazette*, October, 1885, that he was called to see a man, aged 63, in a state of collapse, and evidently suffering from the effects of some narcotic irritant. He had vomited freely; the pulse was imperceptible at the wrist; the patient drowsy and livid, and covered with cold perspiration. There was no diarrhœa, nor was there any complaint of pain. The patient was delirious, and yet could be made to give a kind of answer to a question. The history given was as follows:

The patient had been in the habit of dosing himself with homœopathic remedies, and among other drugs had a decoction of caraway-seeds and dandelion, which he called his diuretic mixture. He had also a bottle of smaller size containing pure mother-tincture of bryonia.

He was suffering from an attack of gout on the present occasion, and had asked his son for a dose of the diuretic mixture, and the son, by mistake, gave him a large teaspoonful of bryonia in water,—about ♏lxxx.

The patient thought that it had not the usual taste of the diuretic mixture, and so

asked to see the bottle from which the dose was taken. The correct bottle containing the caraway and dandelion was then handed to him by some other member of the family, and so he thought that he must have taken the right mixture.

About two hours after this he took his usual dose of 5 drops of strychnine solution, which he was in the habit of taking, and almost immediately after he felt an uncomfortable, tickling, warm feeling in his throat, and very quickly commenced to vomit. Between the initial and last dose he had performed some important business, and, in fact, had been conversing as usual with several people on business matters.

Within a few minutes after the vomiting, which succeeded the last dose,—*i.e.*, the strychnine,—he became oblivious of his surroundings, having a feeling just as if a piece of gauze had been gradually drawn over his face. He then shut his eyes and remembered no more except Dr. Dixson's calling him by a wrong name when he came in. Dr. Dixson was at once sent for by his family. He thought at first the patient would die, especially since it was very difficult to get him to take any medicine by the mouth. However, by dint of perseverance, strong stimulants, as ammonia, nitrite of amyl, coffee, etc., with heat to the extremities, the doctor got the patient out of danger in about one hour and a half.

This case is interesting, as poisoning by bryonia is certainly uncommon, and it is regarded as a simple irritant poison.

The usual symptoms are giddiness, intoxication, or delirium, vomiting, colic, purging, and coma.

Experiments on animals have proved that it causes inflammation of the stomach and intestine.

The fresh plant applied to the skin produces vesication.

Woodman and Tidy (1877) only make reference to three recorded cases, two of which appear to be culled from the French, but the dates are not given. The third appeared in the *Lancet*, 9th May, 1868.

Of the two former cases one is recorded to be a male adult, who took an infusion of the root for ague. Symptoms were purging, followed by death.

The second case is a female adult, who took one ounce of decoction—part by mouth, part by injection—to stop the milk. Symptoms are not recorded, but death followed in four hours.

The *Lancet* case occurred in the person of a child of 3 years (female), who took the berries. Giddiness came on in half an hour, furious delirium during night, vomiting, diarrhœa, dilated pupils, and coma, and death in thirty hours.

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### *PHYSIOLOGICAL ACTION OF SULPHATE OF FUCHSINE AND SAFRANINE.*

While everybody knows that, especially the cheaper and still beautifully colored, red wines do not solely owe their purple lustre to the coloring-matter of the grape, few persons are probably aware that highly poisonous materials are occasionally, if not habitually, employed to produce this fraudulent coloration. Slight constitutional and graver gastric symptoms follow so frequently the ingestion of even small quantities of such wines that a close examination of their constituents is well indicated.

CAZENEUVE and LÉPINE communicated to the Academy (meeting of the 16th of November, 1885) their conclusions as to the physiological action of two drugs which are most ordinarily employed for coloring divers wines, viz., the sulphate of fuchsine and safranine. We abstract the most salient points from a report of this communication as appearing in the *Gazette Hebdomadaire* of November 20, 1885.

The experiments refer to observations made both on animals and on man.

The sulphate of fuchsine was found to be in every way exempt from toxic properties.

The experiments made with safranine, which is the product of an oxidation of various substances, chiefly of aniline and pseudo-toluidone, gave the following results:

If a solution of safranine in salt water, in a proportion of 7 to 100, is injected into the veins of a dog, we perceive at once distinctly toxic phenomena. If a dose of $\frac{5}{10}$ gr. to the pound body weight is given to a dog, we note almost immediately after the injection a conspicuous coloration of the mucous membranes, acceleration of the heart, with a shortening of the contractions, considerable dyspnœa, with marked expiration, and usually convulsive movements of the feet. After the expiration of a couple of hours, we observe intense coloration of the urine, often with albuminuria, without any increase, however, in the quantity of the urine. After an abundant diarrhœa, lasting for several days, the animal perishes. If the doses be doubled, the stated symptoms make their appearance much more rapidly and in a more pronounced manner.

It is possible even that death takes place by respiratory failure before the injection is finished. Making an autopsy, we find the following conditions: The heart is very large, and in its diastolic phase; the lungs are healthy, neither congested nor colored; the peritoneum is injected, likewise the gastric and vesicular mucous membranes, which show a much stronger hyperæmic condition, however; the bile is scanty, and has a decidedly reddish appearance. If safranine is ingested in form of a powder by a dog in a dose of 15 to 60 grs. daily for a period of several weeks, diarrhœa is the only noted symptom, as the irritation of the drug on the intestinal tract, and subsequent copious evacuations, prevent the absorption of its active principle.

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*THE PHYSIOLOGICAL ACTION OF TOBACCO.*

In the Fiske Fund Prize Dissertation, No. XXXIV., entitled "The Physiological and Pathological Effects of the Use of Tobacco," recently published by Messrs. P. Blakiston, Son & Co., of Philadelphia, the author, DR. HOBART AMORY HARE, presents the facts and arguments that have led him to the following conclusions:

1. Tobacco-smoking does not decrease the urine eliminated, but rather increases it. 2. Tobacco does retard tissue-waste. 3. Tobacco and its alkaloid cause convulsions in the primary stage of the poisoning, by depressing the reflex inhibitory centres in the cord. 4. It causes the palsy of the second stage, by paralyzing (*a*) the motor nerve-trunks, (*b*) the motor tract of the spinal cord. 5. The sensory nerves are not affected by the drug. 6. Nicotine contracts the pupil, by stimulating the oculo-motor and paralyzing the sympathetic, this action being peripheral. 7. Nicotine primarily lowers the blood-pressure and pulse-rate; (*a*) secondarily increases pressure and rate; (*b*) thirdly, decreases pressure. 8. The primary lowering of pressure and rate is due to pneumogastric stimulation, associated with vaso-motor dilatation. 9. The secondary stage is due to vaso-motor constriction and pneumogastric palsy. 10. The third stage is due to vaso-motor dilatation returning. 11. Death in poisoning from this drug is due to failure of respiration, the action of the drug being centric. 12. The blood-corpuscles are broken up and crenated by the action of the poison. 13. In death from nicotine-poisoning the blood shows changes in *spectra*. 14. Death can be brought about by the cutaneous absorption of nicotine. 15. Tobacco increases intestinal peristalsis in moderate amounts, and produces tetanoid intestinal spasms in poisonous doses. 16. The liver seems to destroy the poison, although this destruction is participated in by any set of capillaries in other parts of the body. 17. Tobacco-smoking increases the pulse-rate and decreases arterial pressure.

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*ON THE PHYSIO-PATHOLOGY OF FEVER.*

Our space, unfortunately, does not permit us to give more than an epitome of the highly interesting study of PROF. E. MARAGLIANO on the physio-pathology of fever as appearing in the *Centralblatt für Medicinische Wissenschaften* of November 14, 1885.

Maragliano has studied during the last three years the behavior of the vessels of the skin in beginning and in receding fever, with the hydroplethysmograph of Mosso, often eight to ten hours without interruption. A first series of observations was made on patients who, in the course of the experiments, were spontaneously attacked by fever. The main results of these observations were the following:

1. A febrile temperature was found to be preceded by a progressive contraction of the vessels of the skin.

2. During the height of contraction—when the vessels attain their minimum lumen—we find the climax of the febrile temperature.

3. As long as the temperature remains at its highest level the contraction of the vessels persists.

A second series of experiments was instituted on patients in whom the fever set in after a previous reduction of the temperature to normal by antipyrin, kairine, and thalline. In these experiments Maragliano observed the same phenomena as stated above.

In a third series of experiments patients were used in whom the febrile temperature fell to normal during the experiment without the exhibition of antipyretics. The following results were here obtained: 1. The fever attack is preceded by a progressive dilatation of the vessels of the skin. 2. This dilatation increases simultaneously with the sinking of the temperature, and reaches its maximum when apyrexia appears.

These investigations prove the old theory of fever as advanced by Traube. Basing on the results of his calimetric examinations, Maragliano feels certain that in fever we have to deal with a retention of heat, with

concomitant ischæmia of the vessels, and in defervescence, with an increased thermal discharge, with a concomitant vascular dilatation. Still, our author does not by any means believe that the retention of heat is the sole cause for the fever. On the contrary, he is positive that still another factor, viz., increase of heat-formation, plays an important rôle in the causation agencies of fever. The increased production of urea and of carbonic acid gas furnish a satisfactory proof for the existence of this increased heat-formation. As to the true significance of this intensified combustion process, we require a good deal more of detailed knowledge. Possibly it is caused simply by an overheating, as it were, following upon the retention of heat.

Naunyn, Lehmann, and others have recently shown that if animals are subjected to an artificially effected rise of temperature, they give off more urea and carbonic acid. Maragliano has observed the same phenomenon in men if they are subjected to a heightened temperature, such as in consequence of warm baths.

At any rate, there is no doubt that an increase in the heat-production takes place, no matter what causes the latter might have. Therefore we can conclude that the rise of temperature in fever is caused by both a heat-retention and an increased heat-production. This does, of course, not exclude the presence of other still unknown factors.

The experiments and observations made in this connection on various antipyretic drugs are equally interesting.

The first series of experiments were made with kairine, antipyrin, thalline, the salts of quinine, and salicylate of sodium, on individuals who were perfectly afebrile and healthy. The results obtained with Mosso's hydroplethysmograph and Winternitz's calorimeter were as follows:

1. All employed antipyretics cause in apyretic individuals a considerable vascular dilatation.

2. They cause also an increased discharge of animal heat.

3. They produce a fall in the excreted carbonic acid gas.

A second series with these drugs was made on fever patients, and gave the following results:

1. The antipyretic effects of these drugs are caused by a vascular dilatation. When their influence is exhausted, vascular contraction and subsequent rise of temperature ensue.

2. During the period of their activity increased discharge of heat invariably takes place. After their exhaustion the heat-discharge decreases, and the temperature rises again.

3. The influence to antipyretic drugs is intimately connected with a reduction of the oxidizing processes within the economy.

As a general conclusion to Maragliano's valuable researches, we can advance the theory that antipyretic remedies act by being able to eliminate the two most important pathogenetic causes of fever. In other words, they prevent vascular contraction, and the thus resulting storing up of animal heat, and increase the heat-discharge; besides, they combat successfully the increase of heat formation by reducing the intensity of the oxidizing processes of the economy.

This double action of the antipyretic drugs is probably caused by an influence exerted on the innervation of the vascular system and the so-called trophic nerves. Possibly their action affects directly the medullary centres, which, according to the latest researches of Fano, exert a great influence on the nutrition of tissues.

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### *EVISCERATION OF THE EYEBALL BY THE NEW METHOD.*

At a meeting of the Baltimore Academy of Medicine, held December 1, 1885, Dr. J. J. Chisolm (*New York Medical Journal*, December 19, 1885) related a case of evisceration of the eyeball after the plan recently recommended, which consisted in completely excising the cornea by means of a circular incision around its margin, the contents being then entirely removed, leaving the sclerotic intact. The advantage alleged for the operation was that the socket-tissues were not disturbed; neither was the muscular apparatus of the eye interfered with; besides, the stump left made an admirable seat for an artificial eye. The operation itself was very simple, and could be performed much more expeditiously than complete enucleation, but convalescence was so very tedious, and at times gave rise to such painful and alarming symptoms, as had occurred in his case, that in future he should confine himself to the old plan of complete enucleation. It was his usual custom to allow a patient to go about his affairs very soon after the operation, at the outside in twenty-four hours, but in the evisceration operation, even up to the fourth day and later, there were such œdema and pain that he could

not think of allowing the patient to be from under his observation. He had never had such an experience with the old method.

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*ON THE INFLUENCE OF TEMPERATURE ON FILTRATIONS OF ALBUMINOUS SOLUTIONS THROUGH ANIMAL MEMBRANES.*

From a very recent inaugural dissertation of A. Löwy (Berlin, 1885) on this subject we have gathered some principal points of interest. W. Schmidt has found that in filtrations through animal membranes (pericardium of calf) the quantity of the filtrate increased with the rise of temperature, while the relative percentage of solid residue-matter decreased. Löwy filtrated under a constant pressure (84.3 ctm. of the filtration-fluid) blood-serum and solutions of egg-albumen through animal membranes (pig-bladders, dried and softened first in water, then in serum) at a varying temperature. The surface of the filtering membranes amounted to 41.9 ctm. A loss of the filtration-fluid by evaporation was sufficiently guarded against. After a definite duration of the experiment, the quantity of the solid residue, its contents in organic and inorganic substances, were repeatedly determined. Löwy gained the conviction by a separate determination of the albumen that the organic substances consisted almost wholly of albuminous matters. He found that with a rising temperature, the quantity of the filtrate, the dry residue and its contents of organic substances rose constantly. The following table will serve to illustrate these facts with reference to the filtration of diluted blood-serum :

| Temperature (C.). | Quantity (serum). | Solid residue. Per cent. | Organic Matters. Per cent. | Inorganic Matters. Per cent. |
|---|---|---|---|---|
| 16¼° | 8.8 | 0.17 | 0.14 | 0.039 |
| 35½° | 15.98 | 0.33 | 0.28 | 0.072 |

In the majority of cases the relative quantities of the dry residue and of the organic substances are found to equally increase at a heightened temperature ; also the inorganic substances appear to filter in larger absolute quantities in a heightened temperature, though a rise of temperature influences them less than the organic substances. The following table is to illustrate these facts :

| Temperature (C.). | Quantity (serum). | Solid residue. Per cent. | Organic Matters. Per cent. | Inorganic Matters. Per cent. |
|---|---|---|---|---|
| 13° | 3.5 | 8.81 | 7.9 | 0.91 |
| 30° | 9.95 | 7.61 | 6.7 | 0.94 |

In conclusion, we give the figures which Löwy obtained with diluted serum (2.3 per cent. solid residue, of it 2.1 per cent. organic matters) under a temperature varying between 37.5° to 42° (C.).

| Temperature (C.). | Quantity (serum). | Solid residue. Per cent. | Organic Matters. Per cent. | Inorganic Matters. Per cent. |
|---|---|---|---|---|
| 37.5° | 6.0 | 2.32 | 2.05 | 0.27 |
| 42.5° | 6.55 | 2.28 | 2.08 | 0.2 |

Even if the increase of solid matters, as shown by this table, is not a great one, the fact that a heightened temperature increases the filtration of albuminous solutions must be accepted as a physiological maxim.

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*TREATMENT OF LUPUS BY COLD.*

Few diseases of the skin have within a comparatively brief period experienced so many changes of treatment as lupus. Nearly all of the therapeutic interferences in lupus aim at the destruction of the affected tissue, as is clearly the case with the caustic pencil, first recommended by Hebra, the sharp spoon, and the galvano-cautery. The sanguine anticipations in regard to the local employment of iodine and pyrogallic acid found but an imperfect realization, at least these drugs failed to show any specific antilupous properties.

The noteworthy discovery that the lupous tissues contained tubercle-bacilli has hitherto led to but few and practically little important therapeutic innovations. The fact, however, that the number of bacilli was found to be a very small one in every lupous tissue induced Koch, after a careful study of the subject, to assert that the low temperature of the integument formed a check to the development of the pathogenetic microbes of the affection. Basing upon these certainly very plausible conclusions of that distinguished bacteriologist, PROFESSOR GERHARDT, of Berlin, treated four cases of lupus that came under his observation by the application of ice, and communicated his clinical results to the *Deutsche Medicinische Wochenschrift* of November, 1885.

To avoid pressure, an ice-bag was suspended from a scaffold and lowered upon the affected part twice daily for three consecutive hours. It is to be added that the four cases under treatment had previously been subjected to every known mode of medication without experiencing any material improvement.

Gerhardt's ice-treatment, which was in every instance kept up for about a month, produced not only better results than were obtained by

all preceding therapeutic measures, but led to what could with propriety be called a temporary cure.

These experiments having been carried on very recently, Gerhardt is, of course, not yet able to tell whether or not relapses will occur.

At any rate, it is rational to assume that, provided we accept the tubercular and parasitic nature of lupus, the lowering of the temperature forms a powerful check to the growth of the microbes, and that cold is consequently an energetic therapeutic agent in lupus.

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### *THE TREATMENT OF HYDROCELE AND VARICOSE VEINS BY CARBOLIC ACID INJECTIONS.*

Dr. Leonard Weber reports in the *Medical Record*, December 12, 1885, four cases of hydrocele which had been rapidly and painlessly cured by the injection of three ounces of a mixture of equal parts of carbolic acid, alcohol, and water. Of course this method of treatment will not answer in hydrocele where the sac is hypertrophied to any considerable extent. In such cases a radical operation and antiseptic dressings form the safest and best mode of treatment. Dr. Weber also states that carbolic acid has proved a safe and efficient remedy in his hands for the purpose of coagulating the blood in varicose veins, and obliterating them by adhesive inflammation; and he reports a case of severe varicose veins cured by the injection of four drops of carbolic acid into each sinus, entering the needle sidewise, and making a compression on the approximal and distal end of the sinus until a soft coagulum had formed. In treating hemorrhoids, the external hemorrhoids of small size may be obliterated by injecting a minim or two of carbolic acid, or, with a less risk of sloughing, four or five minims of a fifty per cent. solution of the acid.

A careful selection of cases of hemorrhoids suitable for the obliterating treatment by carbolic acid injections is highly commendable. With small, tense, and moderately bulging tumors of this kind good success will be rare, while the procedure is often painful, and not infrequently followed by inflammation. In a few cases, where this plan was employed by Dr. Weber, gangrene of the injected hemorrhoid supervened, and the dead mass came away under antiseptic dressings without any unpleasant local or general consequences.

Phlegmon, abscess, and subsequent fistula in ano, in consequence of injections either too strong or applied in cases in which this mode of treatment was not advisable, have been seen. The possibility of ascending thrombosis and pyæmia under similar circumstances cannot be denied. Altogether, the cure of hemorrhoids by carbolic acid injections is a method neither as generally applicable nor so free from danger as it has been represented by some practitioners.

In operating it will be best to insert the needle about one-fourth of an inch from the base of the tumor, and push it through the sound skin directly forward into its central portion, taking good care not to spill any of the liquid along the track of the needle or at the point of entrance. This precaution is essential if we want to get obliteration of the pile by adhesive inflammation instead of seeing it slough away. The large and pendulous external hemorrhoids may be ligatured after incising their cutaneous parts, cut off, and the wound dressed with iodoform until the ligature comes away.

Whether we employ the ligature or thermocautery in external or internal hemorrhoids, it is good practice to stretch the sphincter ani in a moderate degree before proceeding to operate. Such distention not only facilitates the operation, but also prevents subsequent pain and discomfort, and promotes the healing of the wound.

Carbolic acid injections will not do for internal piles. They must be treated by the ligature, or the clamp and cautery, as described above.

Dr. Weber states that he has the records of four severe cases of external and internal hemorrhoids, three in males and one in a female, every one of which had between five and eight hemorrhoidal tumors within and without the sphincters. They all showed the symptoms of anæmia to a considerable degree. Three of them were operated upon with the clamp and cautery, one with the ligature, and they all got well without secondary hemorrhage or other unpleasant symptoms.

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### *SULPHATE OF SPARTEINE.*

M. Germain Sée, the eminent Parisian therapeutist, presented at a recent meeting of the Academy the results of his researches on the sulphate of sparteine, which served to arouse the highest interest in all present. Before discussing the remarkable statement of Sée it will be well to give an exact representation of his main conclusions regarding the drug, as published in the *Gaz. Hebdomadaire* of November 27, 1885.

Sulphate of sparteine is a cardiac regulator and a dynamic medicine of high power. The following are its most characteristic physiological effects as far as the circulatory system is concerned:

1. Its most salient action is to raise the power of both heart and pulse; in this respect, however, it acts in a more pronounced manner, more promptly, and more constantly than either digitalis or convallamarine.

2. It regulates immediately a disturbed cardiac rhythm, and incomparably better than any other known drug.

3. It accelerates the beats of the heart in grave atonic conditions of both the heart and the general organism, and approaches in this respect belladonna.

All of these phenomena appear at the end of one or several hours, and persist three to four days after discontinuation of the medicine. During this period the vital energy of the entire system is raised and the respiratory act facilitated, though not so greatly as after the exhibition of iodide of potassium.

The urinary functions alone seem to remain unaffected, in the moderate doses at least in which Sée has hitherto employed the drug.

As to the indications of sulphate of sparteine, we can gain from the above statement a very clear and precise view. The drug suggests itself in the first place in myocardiac weakness, no matter whether resulting from direct tissue-changes or from an insufficiency subsequent to compensatory efforts on circulatory impediments. If the pulse has become irregular, intermittent, and arhythmic in the course of various cardiac or general affections, sulphate of sparteine should invariably and rapidly restore the normal condition by sustaining and augmenting the power of the heart.

So far, so good. It sounds well enough, and may even be precisely as stated by Sée. But we fail to note two very essential factors in the report: first, there is not the slightest mention made of any possible untoward after-effects, especially of an accumulative action, so dreaded in the case of digitalis, and then Sée's report lacks the indispensable basis of clinical trials and proofs, which we are very anxious to obtain.

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*BACTERIOTHERAPY.*

In a recent number of the GAZETTE we gave a short account of Professor Cantani's experiment in "bacteriotherapy," in which a phthisical patient was subjected to inhalations of bacterium termo. The result was that bacillus tuberculosis disappeared, and the condition of the patient was wonderfully improved. DR. SALAMA, of Pisa, according to the *British Medical Journal*, November 28, 1885, reports another case of the same kind. In a case of phthisis, with a cavity in the apex of the left lung and various patches of consolidation, Koch's bacillus disappeared within about a fortnight after the inhalations of the bacterium termo were commenced, all the other symptoms improving at the same time. Dr. Maffucci, Professor of Pathological Anatomy at Pisa, who verified the diagnosis, prepared the bacterium-culture. A few drops of spring-water were added to a sterilized solution of gelatin in meat-broth with peptone. After a day or two colonies of various micro-organisms made their appearance, and among them was the bacterium termo. Under the microscope, a sterilized platinum needle was dipped into this, and then introduced into another portion of the gelatin preparation. After two days this was found to be a pure culture of the bacterium termo. The contents of one test-tube prepared in this way served for one day's inhalations, being mixed with a meat-broth made from 150 grammes of beef to 200 grammes of water, and left for eight or ten hours, according to temperature. If left too long, the putrefaction became insupportable to the patient. Broth so prepared was given by Siegel's spray-producer every day in divided doses. Sufficient time has not yet elapsed to show whether the improvement was permanent. It is not quite certain that the bacterium was the sole agent of amelioration here. It is possible that the meat-broth may not have been without its effect; and it is just within the range of supposition that the bacterium has a psychical influence on physician as well as on patient, not less important than its alleged bacillicide properties.

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*INJECTIONS OF CALOMEL IN SYPHILIS.*

DR. NEISSER, professor at the University of Breslau, recommends in the *Deutsche Medizinal Zeitung* of November 30 his method of employing calomel hypodermically. He uses the following formula:

℞ Hydr. chlor. mit.,
Sod. chlor., āā 5 parts;
Aquæ dest., 50 parts.

And injects a syringeful twice every two

weeks, or once every week, into the gluteal region, penetrating deeply into the tissues. Neisser claims that on account of the long-lasting and yet but very slowly-proceeding absorption of the mercury, this method is alongside of the inunction-cure to be regarded as the most efficacious and energetic treatment of syphilis. He has treated one hundred and twenty-two cases (fifty-four males and sixty-eight females) with these calomel injections, and feels quite gratified at the results. In rebellious and relapsing cases this method gave especially favorable results. The objections that can be urged against these calomel injections are that they occasion a good deal of pain, and not rarely produce infiltrations and abscesses, which untoward effects, however, can all be avoided by an ample ingestion of chloride of sodium, either as *an addition to the food or taken alone.*

The nozzles of the hypodermic syringes used in Germany are about one-third longer than those used in America, and are buried in the tissues in their full length. It is claimed that the danger of forming an abscess is lessened by entering the lowest strata of the connective tissue, or even the muscles themselves. The method as practised in America, however, gives such satisfactory results that there is no occasion to deviate from it.

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### *ON THE DURATION OF THE ACTION OF MEDICINES.*

At the last annual meeting of the British Medical Association, DR. D. J. LEECH opened the discussion in the Section of Pharmacology and Therapeutics on the duration of the action of medicines with a very valuable paper, containing many points which cannot fail to interest our readers, and we therefore publish a tolerably full abstract of his address.

In the treatment of disease by medicines we have to determine the frequency with which a drug must be given, as well as the quantity in which it should be administered. Experience doubtless aids us in deciding as to the periods which should intervene between successive doses of medicines; but in a large majority of cases the frequency of repetition is, to a great extent, a matter of routine. The custom of administering medicines at regular intervals of three or four hours—a little oftener when the case is severe, at longer intervals as it becomes milder—has come down to us from a time when the knowledge, both of disease and of drugs, was less advanced than it is now. Disease was formerly looked upon as an enemy to be attacked and routed by medicine: if the enemy were in strong force, it was considered desirable that a strong fire should be maintained at short intervals. If he showed signs of retiring, the fire was slackened in its severity, in its frequency, or in both. The exact manner in which medicines effected the cure of disease was either not considered at all, or was the subject of vague speculation. But, at the present time, one of the leading objects of the therapeutist is to alter the functions of certain tissues or organs temporarily or permanently. Sometimes we aim at restoring the normal functions of parts, sometimes we desire to modify functions for a time, and thus neutralize evils arising from a disordered condition of other parts on which we cannot act. But whether our purpose be to restore or modify, we know it can rarely be attained except by acting on the tissues or organs we wish to influence, with a certain degree of continuity; and we should endeavor, therefore, to repeat our medicines in such doses, and at such intervals, that the continuity of action we desire may be attained.

If this be so, it is manifest that our knowledge of the length of time during which a medicine can be counted on to act on any organ ought to play an important part in our decision as to its repetition. Unfortunately, our information as to the duration of action of some drugs is very limited, and the causes which lead to variations in duration are only obscurely known to us.

Now, first of all, the question may be raised, Does our present knowledge support the view that medicines act during definite periods; that is, can we rely on a given dose of a drug influencing the organ in which it acts for the same space of time in different individuals, or on the same individual at different times?

It must be confessed that some of our experiences seem at first sight to give a negative answer. We know that if a number of persons take a poison together, the effects may commence and terminate at different times. A dose of arsenic may cause violent symptoms in ten minutes, but ten hours may elapse before evidences of poisoning appear, and the period at which death occurs may vary in a corresponding manner.

Differences with regard to the effects of poisons can be, to a great extent, explained by differences in the rapidity with which the absorption commences. As long as a poison remains quite unabsorbed in the stomach, it cannot, of course, exert its usual effects on other organs; and toxic substances seem at

times to influence the stomach in such a manner that absorption is materially delayed.

Drugs in medicinal doses are less liable to raise up barriers to their own absorption, but a very slight alteration in the condition of the stomach may delay the solution of the materials which, ordinarily, are quickly digested; and there can be little doubt that drugs, even in medicinal doses, may at times remain long unchanged after they are swallowed. Sometimes they are then rejected. Most of us have seen cases in which a dose of medicine has been returned after a sojourn of an hour or two in the stomach. But sometimes absorption at length takes place, and then the ordinary physiological effects appear, though at a late period. Deferred absorption, probably, accounts for most of those instances in which the action of medicines is unduly delayed.

When the absorption of a drug commences without any unusual delay, the duration of its action will depend chiefly on the time required for the completion of this process and on the rapidity with which excretion of the drug takes place. It will likewise be influenced by the susceptibility of the part affected, for we may well suppose that the more powerfully an organ is acted upon, the longer will the disturbance in its functions continue, even though the cause of the disturbance has passed away. Now, susceptibility of an organ to the influence of a drug may vary considerably in different people, and likewise in the same individual, according to the state of health and other circumstances.

Manifestly, the conditions which regulate the duration of the actions of medicines are exceedingly complex. Apart from exceptional circumstances connected with absorption, however, Dr. Leech shows that many medicines do act for tolerably definite periods; and, in some cases, it may be possible to determine the average time of action of individual doses with sufficient exactness to serve as a guide to repetition.

In the first place, it may be pointed out that experience has already made us aware of relative uniformity in the period of activity of many drugs. Ammonia acts quickly on the heart, and its effects soon pass away; the tonic effects of digitalis are slow to appear, but they last a long time. Of our diuretics, purgatives, and emetics, some act for a shorter, some for a longer, period. The diuretic effects of caffeine, for example, soon cease when we stop the administration of this drug, while the increased flow of urine which is produced by digitalis usually goes on for a long time, sometimes for several days, after the medicine has been discontinued. The difference in the period during which these two drugs act may of course depend on the fact that they exert their influence on different tissues. Caffeine, it has been suggested, stimulates the tubular epithelium, while digitalis causes diuresis through its effects on the vascular system. But the relative difference in the duration of action must certainly be dependent on the fact that each influences the tissues it affects for a more or less definite period. We find, too, that when drugs act in a similar manner on the same tissues, the relative periods of their activity may vary distinctly.

The symptoms of intoxication produced by alcohol can be reproduced by ether, and there can be little doubt that, in inducing their usual results, these two drugs affect the same tissues and functions. But each stage of intoxication is shorter, when caused by ether, than when it is due to alcohol, and, as the relative difference of activity is always to be observed, it is manifest that the duration of the influence of these two drugs, on the parts of the body they affect, must be, within certain limits, definite. What these limits are has not yet been ascertained; but in the case of a class of drugs which yield symptoms capable of graphic representation, the limits of duration may be, to a certain extent, demonstrated.

The marked phenomena produced by the inhalation of nitrite of amyl, and the resemblance between them and those which follow the administration of other nitrites and nitroglycerin, have been made known to us by the investigations of Drs. Brunton and Cash, Dr. Murrell, Dr. Hay, and others; but all who have made observations on the comparative effects of these substances have noted the great difference there is between the duration of the influence of the amyl compound and that of the other nitrites and nitro-glycerin. Dr. Murrell has pointed out that, while the influence of amyl nitrite is very transitory,—a tracing taken a minute and a half after the inhalation of the drug appearing normal,—the full action of nitro-glycerin is not observed in the sphygmographic tracing till six or seven minutes after the dose has been swallowed, and the tracing does not assume its normal condition for half an hour. Dr. Hay has further drawn attention to the fact that nitrite of sodium checks anginal pains for a longer time than nitro-glycerin, from which it follows that the influence of the alka-

line nitrite on arterial tension persists longer than that of the glycerin compound.

But it has been noticed, too, that the phenomena produced by the nitrites and nitro-glycerin vary not a little in different individuals.

Some people, for example, are powerfully affected by half a drop of the one per cent. solution of nitro-glycerin, while many can take five drops, or often a larger quantity, without feeling any sense of discomfort. Dr. Leech therefore determined the period during which nitro-glycerin and the nitrites depressed the circulation, and has administered these drugs in various doses to individuals differing considerably in susceptibility to their effects, the subject in all cases being free from cardiac disease. He found that the influence of amyl nitrite on the pulse commenced immediately after its inhalation; the arterial tension is reduced to its lowest point in from thirty to sixty seconds, and the blood-pressure then rises again, and usually attains its ordinary height in a minute and a half, though at times the normal tension is not reached for two to four minutes, and sometimes a fall of tension follows in a few minutes after an apparent recovery. This is succeeded by a subsequent rise and improvement, and a third or slight fall, so that the effects of the nitrite may be traceable by the sphygmograph for twenty minutes to half an hour. The duration, then, of the effects of the nitrite of amyl varies considerably. Its very marked tension-reducing influence never lasts more than one and a half to two minutes, but a slight depression of blood-pressure is commonly present for a longer period, and not only does the duration of the influence of the amyl nitrite differ in different people, but it is also variable in the same individual at different times. Of two successive doses, the influence of one may be traced for half an hour, whilst the effects of the other may disappear in the course of a few minutes; but this remark only refers to the slighter effects, very distinct lowering is of the same duration in all.

The nitrite of ethyl depresses tension for a much longer time than amyl nitrite, and in a different manner, since seven or eight minims of pure ethyl nitrite will usually keep the tension distinctly depressed for at least forty-five minutes, in some people for rather more than an hour; and the circulation is often influenced during the whole of the second hour after administration. The depression of the tension, though more prolonged, is not so great as that produced by nitrite of amyl.

Nitro-glycerin acts more quickly and more powerfully than nitrite of ethyl; its effects, too, are more prolonged. A single drop of a one per cent. solution usually causes a fall in the pulse-tension in one and a half to two minutes, and in three or four minutes the fall is well marked. The blood-pressure continues low for about ten minutes, sometimes a little longer; then it gradually rises, and in half an hour may be almost normal. But, after this, oscillations commonly take place, and the normal standard is not usually perfectly attained for an hour to an hour and a half after the drug has been given.

The duration of the effects of the alkaline nitrites is more prolonged than that produced by the nitro-glycerin, but they are not so rapidly produced. In most cases ten minutes elapse before the tension falls markedly, but a slight change is seen within the first five minutes. The size of the dose exercises only a slight influence on the time of commencement, but those who are very susceptible to the action of nitrites are affected in six minutes as strongly as ordinary people are in ten. After the first ten minutes the pressure falls rapidly, and it remains usually very low from the end of the first half-hour until about two hours have elapsed from the time of administration. These experiments seem to show that nitrite of amyl acts powerfully almost at once, and for two minutes, but its influence on the pulse may often be traced for ten to twenty minutes, sometimes longer. The effects of nitrite of ethyl are seen but five to twenty minutes after its administration, but remain very visible for an hour, and are perceptible for one and a half to two hours. Nitro-glycerin powerfully affects the circulation in two minutes; its influence is most marked for thirty to forty-five minutes, and may be detected for two and a half to three hours. The alkaline nitrites produce but little influence on pressure for from six to ten minutes, but then depress it strongly for two and a half hours, and act altogether for between four and five hours. Cobalt yellow begins to act markedly in from twenty to thirty minutes; its tension-depressing effects are often very pronounced for more than three hours, and sometimes visible for six hours.

The times named are, of course, averages. As Dr. Leech has pointed out, the period during which drugs act on individuals is influenced by the natural susceptibilities of the organs affected, by the dose, and by the condition of the absorptive and excretive powers. It therefore follows that the duration of action

must differ within certain limits, not only in different individuals, but also in the same individual at different times.

The state of the organs connected with absorption and excretion is hardly ever the same for any length of time, and so it comes to pass that even consecutive doses in the same individual often vary, to some extent, in the period of their action. If, however, we can arrive at some idea of the average time during which we can count on single doses of our medicines acting, and the limits of variation in duration under different conditions, we shall have gained much.

Susceptibility can usually be determined by experiment, and sometimes judged of in other ways. In the case of the nitrites, for example, a single administration, if carefully watched, may enable us to decide as to whether the subject is easily affected or the reverse; but we may form an opinion on this point from the general characters of the circulatory system. The anæmic, and those of weak circulation, are usually powerfully affected by tension-depressants; those who have a high arterial tension are not so readily influenced.

The benefit derived from these researches is well seen in the case of the nitrites, since through them we have now the power for depressing arterial tension for any time we like. We may influence it for a few seconds; we may keep it low for hours; and when we consider the advantages which accrue in certain conditions from lowered tension, it is manifest that we have acquired almost a new therapeutic power.

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### *ACTION OF MERCURY ON THE BLOOD IN SECONDARY SYPHILIS AND IN ANÆMIA.*

The introduction of the hematimetric method into the experimental researches of therapeutics insures a precision and exactness of investigation unattainable by the older observers. The influence of the salts of mercury on the circulation—this old and highly important topic—has been recently the subject of a most thorough and strictly scientific clinical study by Dr. L. Gaillard (*vide Archiv. Gènèrale de Médecine*, November, 1885). The subjects on whom the first series of observations was instituted comprised,—

1. Syphilitic patients without or with a slight anæmia.

2. Syphilitic individual with an advanced state of anæmia.

3. Syphilitic individual also with an advanced state of anæmia, but in a condition of mercurialization.

Gaillard's conclusions are as follows:

In the first group a diminution of the number of blood-globules and of the hæmoglobin could be observed in the course and at the end of the mercurial treatment.

In the second group a favorable result could rapidly be noted, both the number of blood-globules and the hæmoglobin increasing considerably and in a short time.

The subject of the third observation was not improved. The anæmia had no tendency to disappear, even after the effects of mercurialization had passed away. There was an evident intolerance of the drug, which must be borne in mind both regarding prognosis and the estimation of the therapeutic result.

Comparing these results, we see that the second category, representing syphilis and anæmia, profits most from the tonic and reparative action of mercury. It is hence in these patients that we can look upon mercury as a restoring and augmenting agent of both blood-globules and hæmoglobin. This refers only to the red blood-corpuscles; the white ones were nevertheless counted by Gaillard in each instance. Their number appears to diminish under the influence of mercury, as has also been held as early as 1874 by Wilbouchewitz. [Still it appears hazardous to make any definite statement in this respect. We all know the instability and variance locally and numerically of the white blood-corpuscles. Remembering their abundance in persons affected with even slight suppurations, we would not be surprised to see them decreasing in a woman suffering with vaginitis after the cure of the local trouble.]

The second series of observations refers to the action of mercury on the blood in anæmia. The patient took ordinary doses of either the protoiodide of mercury or of the sublimate. The obtained results are comprised in the following theses:

1. The number of red blood-globules can decrease in anæmic persons under a mercurial treatment in the beginning without reattaining the original numerical status. More frequently, however, they increase in number progressively up to the fourteenth day, when a slight reduction takes place again.

2. The hæmoglobin increases daily and progressively up to the twenty-fourth day; then it is reduced toward its original figure, but surpassing it still, if the treatment lasts for several weeks.

3. The hæmoglobin increases more con-

siderably in proportion than the red blood-corpuscles. It increases even when the latter diminish in number, so that mercury can be placed alongside of those metals which elaborate hæmoglobin.

4. The bodily weight increases nearly constantly under a mercurial treatment. Still, we are unable to establish an exact relation between this phenomenon and the condition of the blood.

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### *THE ELEMENTS OF PROGNOSIS IN BRIGHT'S DISEASE.*

At a meeting of the New York Medical Association, held November 16, 1885, Dr. Austin Flint read a paper with this title (*New York Medical Journal*, December 5, 1885). In the popular mind the name Bright's disease at the present time had a prophetic import not unlike that of a verdict of conviction after a trial for life. It was regarded as a hopelessly fatal malady. This prevailing impression reflected the views of the medical profession that a fatal termination would invariably take place sooner or later. This view accorded with our pathological knowledge and clinical experience. But the scope of prognosis was not limited to recovery from the disease. A disease might involve more or less irremediable damage to important organs; but after having progressed to a certain extent the damage might not become greater, and the remaining healthy portion of the organs might be sufficient for all purposes of life and a perfect state of health. Again, a disease might be progressive, but so slow as not to be opposed to long life and general good health. But in chronic disease the danger to health might depend upon associated affections, or chronic disease might be tolerated, provided the conditions were favorable; otherwise it would prove fatal. Was the disease acute or chronic? Assuming the existence of acute Bright's disease, experience taught that, exclusive of the important concomitant affections, it did not end fatally as a rule, and did not result in any permanent renal lesion. In other words, the acute was not followed by the chronic disease, but exceptionally it ended fatally or in the chronic form. In some cases the acute disease was not marked; it continued for some time, and ended in recovery. Here he would substitute for the word acute, subacute. In some cases the question would arise whether the disease was subacute or chronic, and the diagnosis could only be definitely settled in favor of the subacute form by the disappearance of every evidence of renal disease after some weeks, and the recovery of health.

The author then considered some of the elements of prognosis in cases of chronic Bright's disease. What were some of the conditions requisite for latency? 1. The kidneys must not be damaged beyond a certain degree. 2. The important organs of the body, other than the kidneys, must be capable of performing their respective functions satisfactorily. 3. The laws of health relating to alimentation, exercise, etc., must be observed. Suppose these conditions to be fulfilled, and a lesion of the kidneys to exist which diminished their functional ability one-half, and the disease was not progressive, life and health would be compatible with the existence of chronic Bright's disease for an indefinite period. In order that chronic Bright's disease should be well tolerated, the treatment should relate to accessory conditions required for bringing about toleration, those conditions relating to other organs of the body and to general hygiene. The kidneys in this condition were incapable of meeting an additional demand on their functions. Should the patient fail to observe the accessory conditions mentioned, the inefficiency of the kidneys would become manifest in headache, misty vision, nausea in the morning, impairment of the appetite, and general debility. Examine the urine in such a case, and evidence would be found of chronic Bright's disease which had probably existed for years, the progress of the renal affection at length rendering the organs incapable of performing their functions properly, which caused attention to be directed to the state of the kidneys. It was important, in determining whether the kidneys eliminated excrementitious matters sufficiently not to endanger the health, to make a thorough examination of the urine, not alone with regard to the presence of albumen and casts, but also as to the amount of urine eliminated daily, its specific gravity, and the proportion of the salts. The quantity of the urine might be increased while the specific gravity was so low as to involve great danger from uræmic toxæmia. Suppose the examination of the urine in a case of chronic Bright's disease showed renal adequacy, how should that fact influence the treatment? In this way,—that diuretics, sudorifics, and hydragogue cathartics would not be indicated; indeed, inasmuch as their influence was debilitating and opposed to the accessory conditions for health just mentioned, they were contraindicated. Was the degree of renal

adequacy, as determined by an examination of the urine, reliable in judging of the absence of danger from toxæmia? This question was to be answered in the negative. In some cases of Bright's disease the quantity of the urine was decreased for a long period without serious consequences. The explanation lay in the fact that the excrementitious matter was eliminated vicariously, or its effects upon the system were counteracted by other agents. On the other hand, slight inadequacy, without vicarious elimination and counteracting agents, sometimes led to serious consequences. The prognosis after coma was always grave, yet we meet with cases repeatedly in which life was preserved for a long time. Of acute pulmonary œdema the same might be said as of uræmic coma. In his experience the most serious consequence of Bright's disease was dyspnœa, or renal asthma, apparently due to toxic effects upon the respiratory centre. He had never known such a case to end in recovery, but he had known life to be prolonged for several years after dyspnœa from pulmonary œdema occurring in the course of chronic Bright's disease.

Recapitulating, Dr. Flint said that subacute diffuse nephritis, having the same seat and characters as acute Bright's disease, exclusive of acuteness, occurred not only after scarlet fever and other fevers, but irrespective of these; and when it occurred as a primary affection, or in connection with other diseases, it was liable to be overlooked, or, if recognized, to be mistaken for the chronic form. Further, acute or subacute diffuse nephritis not infrequently occurred as an intercurrent affection in the course of chronic Bright's disease, and rendered the prognosis temporarily more serious. The disappearance of symptoms and the presence of health did not necessarily indicate that the chronic disease was not still in existence. Again, a susceptibility to the causes of inflammation of the uriniferous tubules, irrespective of the existence of chronic Bright's disease, was to be recognized as an individual peculiarity.

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*ON MERCURIAL SOAP.*

Dr. Schuster, of Aix-la-Chapelle, has prepared some neutral soft mercurial soaps, which we believe to have material advantages over the mercurial ointments. We give the formulas as published in the *Deutsche Medizinal Zeitung* of November 30, 1885.

200 parts of lard are saponified with 100 parts of liq. pot. (caustic), and mixed with 50 parts of water. 200 grm. of mercury are then rubbed up in the most careful manner with 100 grm. of lard, with the addition of some chloroform, which favors the fine distribution of the metal. We then add from the above soap 300 grm. very gradually, so that the preparation receives the consistency of unguentum hydrarg., and under the magnifying-glass shows no globules of mercury.

Another soap is prepared by taking 1 part each of mercury, lard, and potash-soap, and adding at a moderate heat liq. pot. q. s. until complete saponification results.

The soap is to be placed on the part without any addition of water; then the fingers are to be dipped into water, and the soap rubbed all over the intended region. The great advantages of these soaps over the mercurial salves are that they can be rubbed into the part quicker (in ten to fifteen minutes), do not soil the clothing so much, and very rarely, if ever, produce a mercurial eczema. Besides, a far less quantity of the soap than of the ointment is needed to obtain the same effect, while the absorption of the mercury is claimed to be very prompt and easy. At any rate, the mercurial soaps deserve a trial.

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*POISONING BY CAMPHOR.*

Mr. J. P. Ryan reports in the *Australian Med. Journal*, October 15, 1885, a case of a young woman who was brought to his house in the afternoon of September 15, her face duskily suffused and perspiring, and breathing slow and shallow, with a tendency to sighing, and her pulse rapid, small, and compressible. Her breath smelt of camphor. She was in a semi-unconscious state, with eyes partly closed, and if placed in the sitting posture her head and body inclined to fall forward and to the side, but if roused and spoken to loudly she made an attempt to sit upright, lifted her eyelids for a moment, smiled in a lackadaisical sort of way, and responded rationally, but in the uniform halting accents of a person laboring under the influence of drink. She was above the middle height, strongly built; and her sister, who accompanied her, stated that she was unusually robust and healthy. They had lunched together at one o'clock on coffee and bread and butter, and afterwards were doing some shopping. She had a slight cold, for which she had been recommended camphor. She had provided herself with a piece as big as an almond, which she began to chew up and swallow in minute portions. Some twenty minutes afterwards she suddenly com-

plained to her sister of feeling giddy and queer, and they had barely time to get into a shop which they were passing when she fell down into a quasi-fainting fit.

Resort was had to the usual restoratives,—fanning, cold water, smelling-salts, etc.,—and after a little she rallied somewhat, but began to talk excitedly, and endeavored to sing or hum snatches of tunes, paying but little heed to the conversation and efforts of those around her. Her face was flushed, the expression peculiar, and her sister said that but for the fact she knew that she never drank any wine or spirits, and that they had been together all the forenoon, she would have come to the conclusion that she was under the influence of drink. As the hilarious excitability was gradually passing into a state of stupor, the sister became alarmed, and had her conveyed to Mr. Ryan's house.

She began eating the camphor at two o'clock. Twenty minutes or so afterwards she had a quasi-fainting attack, followed by hilarity, excitability, with rapidly-ensuing stupor; and when Mr. Ryan saw her, about three o'clock, she was nearly unconscious and in a semi-collapsed state. As her condition was somewhat alarming, no time was lost in giving her an emetic dose, gr. xx of zinc sulphate, which was followed by free vomiting. The vomited matter smelt strongly of camphor, but no pieces of the drug were found in it. After waiting for fifteen minutes, Mr. Ryan gave her 30 ♏ of aromatic spirits of ammonia in a small cup of strong black coffee. Her breating and circulation improved; her face, from being flushed and dusky, had become somewhat pale, the expression being more natural, and she gradually sank into a light slumber. Half an hour afterwards another dose of coffee and ammonia was administered, and by four o'clock she was sufficiently recovered to be removed to her own home. She was somewhat light-headed and giddy, but only complained of a burning pain at the pit of the stomach, which had disappeared by the next day.

The above case is of some interest on account of the severe if not alarming symptoms produced by an apparently small dose of camphor. In most of the text-books on materia medica the ordinary dose is stated to be from gr. i to gr. x, though Wood goes up to gr. xv (Treatise on Therapeutics). He affirms that no death in the adult has occurred from the employment of the drug, though he allows that serious symptoms have resulted from poisonous doses, viz., 30 to 60 grs.; and Sidney Ringer, in his "Handbook of Therapeutics," recommends as much as 20 grs. every two or three hours in the delirium of adynamic fevers.

In the case above reported scarcely more than the latter quantity could have been taken; for her sister, a most intelligent woman, assured Mr. Ryan that the piece was no larger than an ordinary almond, such a quantity weighing about 20 grs. If the solubility of camphor in water is borne in mind, it may be fairly assumed that a considerable proportion of this was expelled from the stomach in the vomited matters. Now it follows, if this be granted, that dangerous symptoms of poisoning were produced in a healthy adult woman by a quantity not exceeding the ordinary doses of camphor as given in the principal text-books of materia medica. [It will be noticed that in this case the size of the dose is simply an inference from the statement of the patient, and is therefore open to cavil.—Ed. T. G.]

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### *FOOD FOR INFANTS AND BREAD FOR DIABETICS.*

Dr. H. Boehnke-Reich describes in the *American Journal of Pharmacy*, December, 1885, a nutritive biscuit and bread which are recommended for infants and diabetics. The nutritive biscuit is intended for infants after they have reached the age of about four months, but is also quite agreeable to adults, and is particularly strengthening to nursing mothers. It is prepared from the best wheat flour, which is mixed with sugar, malt-yeast, table salt, condensed milk, and nutritive salts in such proportions that the finished product has the composition given below. The nutritive salts, according to an assay by B. Kohlmann, made for the Pharmaceutical District Society of Leipzig, contain in 100 parts 6.66 phosphorus, 65.50 oxygen, 5.17 hydrogen, 3.00 carbon, 10.00 calcium, and 9.67 sodium. The dough, properly made, is set aside in a warm place for about an hour and a half, is then placed in suitable moulds, and when sufficiently porous is baked at a dry heat of 200° C. After removal from the oven the cake is exposed to the air for twenty-four hours, and is afterwards slowly roasted at a temperature of 100° C.

The analysis by B. Kohlmann showed a composition in 100 parts of biscuit of moisture 9.76, aliments of respiration 74.94 (including sugar 5.86), plastic aliments (albumen, etc.) 8.56, fat 2.58, inorganic constituents 4.16 (including calcium phosphate 2.25).

Properly preserved, the biscuit remains good for a long time. It has been used by Dr. Furst, of Leipzig, Prof. Deme, of Bern, and many other physicians with good success. The average weight of this nutritive biscuit is not given; but it is stated that two biscuits a day are sufficient for an infant between three and six months old, and four or five biscuits for a child a year old. The biscuit is softened in good warm cow's milk, which, if necessary, is suitably diluted with water, or it may be taken with tea, chocolate, or beef-tea. Dr. Furst states that babies over six months old usually like this biscuit well, digest it properly, and are not subject to glandular swellings, as is often the case if fed on ordinary pastry or farinaceous food.

The bread for diabetics is prepared from pure fresh gluten, with the smallest possible quantity of amylaceous additions. Its odor and taste are pleasant, neither insipid nor sickly, and it may be taken by the patients for a long time without becoming repulsive. Kept in an upright position, it remains palatable for more than three weeks. Kohlmann found its composition to be as follows: Moisture, 22.03; protein compounds, 20.56; fat, 21.78; carbohydrates, 24.28; cellulose, 6.95; mineral constituents (including table salt), 4.40. A similar bread, made by P. Ossian, of Paris, contains a larger percentage of carbohydrates (29.71) and of gluten, the latter being partly replaced by fat in the new bread, which thereby becomes more agreeable for continued use, and retains its softness for a longer time.

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### *TREATMENT OF TRIFACIAL NEURALGIA WITH HYPEROSMIC ACID.*

Neuber was the first to treat neuralgias with hyperosmic acid. Instead of his watery solution, which has the disadvantage of blackening and of losing its medicinal properties in three or four days, we note that Dr. Schapiro (*Archiv. Génér. de Méd.*, November, 1885) has recommended the following mixture:

℞ Acidi osmici, 1 part;
Glycerinæ (chemically pure), 40 parts;
Aquæ destill., 60 parts.

He injects 5 drops (containing 2½ mgrm. of osmic acid) of this solution under the skin. Later the dose is increased to 6 mgrm.

The injections made *loco dolenti* occasion exceptionally an exasperation of the pain by exciting branches of the trifacial which previously were unaffected. According to our author, the specific action of hyperosmic acid upon the nervous tissues depends primarily upon a cauterization of the nerve-terminations, and secondarily upon the narcotic action of the drug.

He has treated eight patients (five women and three men), all suffering from intense facial neuralgia and having resisted every other treatment, with hyperosmic acid, and experienced only a single failure. In this case some central lesions were undoubtedly at the bottom of the affection. About twelve injections sufficed to bring about a complete cure. These results can be regarded as satisfactory, and certainly invite to a trial of the drug in trifacial neuralgia.

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### *THE DIFFERENCE IN THE SYMPTOMS OF STRANGULATED AND OBLIQUE INGUINAL HERNIA.*

At a meeting of the New York Medical Society, held November 18, Dr. Frederick Hyde read a paper with the above title, in which the following were the principal points developed (*Medical News*, November 28, 1885):

1. In proportion to the length of time an inguinal hernia existed would the symptoms and signs of strangulation be mild and chronic.

2. In a case of long-standing inguinal hernia in which signs of stricture of the bowel are obscure, there not being evidence of total obstruction of the canal, often it is not safe to wait for fæcal regurgitation before deciding that strangulation exists.

3. When strangulation occurs at the first protrusion, the symptoms of strangulation will be found to be more marked.

4. If hiccough and fæcal vomiting existed from nearly the beginning of the symptoms, no time is to be lost, herniotomy should be performed at once.

5. If a swelling exists with symptoms of obstruction of the bowel, the patient complaining of severe pain in the abdomen, but of none in the tumor, and had hiccough, although there is absence of marked general disturbance, a fair trial of taxis should be made, and that failing to reduce the tumor, herniotomy should not be delayed. This remark was based on an interesting case, the history of which Dr. Hyde gave in detail. No fæcal vomiting occurred, no pain in the tumor even after taxis, but there was some pain in the abdomen and hiccough. Because of the mildness of the symptoms the consulting physicians delayed the operation more than twelve days, and when it was finally per-

formed, the strangulation was found to have existed within the abdomen. The patient died.

6. If no strangulated portion be found within the external sac, the finger should be passed internally, and adhesions sought for in the neighborhood of the opening.

7. Too long a trial of taxis before dividing a stricture should be guarded against, as it prepares the way for the death of the patient after herniotomy.

8. After stercoraceous vomiting has set in taxis should not be applied, but herniotomy should be performed at once, although the prognosis is unfavorable.

9. If after opening the sac the omentum is found smooth, and no intestine can be detected, the omentum should be opened to learn whether it may not contain a strangulated portion of intestine. It is unfair to speak of herniotomy as a dangerous surgical operation *per se*. The danger attending the operation is due to the condition of the sac and its contents, and to taxis and delay in operating.

Dr. J. W. S. Gouley read some notes on the same subject, in which he reached the following conclusions:

1. When doubt arises in the mind of the surgeon respecting the existence of strangulation of the intestine or omentum in case of incarcerated hernia, it is his duty to give the patient the benefit of the doubt by at once resorting to the operation of herniotomy.

2. Delay in relieving the strangulation is often fatal, while herniotomy in a case in which no strangulation exists is not usually harmful.

3. Medicinal treatment is often delusive, and local applications, such as opium, tobacco-poultices, ice, etc., are in most cases worse than useless.

4. Persistent taxis is infinitely more dangerous than herniotomy, and such taxis, even when it is followed by reduction of the hernial protrusion, is often the cause of fatal peritonitis.

5. Another, though rare, effect of violent taxis is the reduction *en masse* of the hernia in its state of strangulation, and its result is known.

6. As a general rule, two minutes of gentle taxis, the patient being in a hot bath, will settle the question as to the possibility of safely reducing the hernia.

7. Therefore it may be said with propriety that the less taxis, the less ice, the less other topical applications, the less opium, the less general or special meddlesome interference which often do serious injury to the intestine, the better the chances of recovery in the event of herniotomy. This is particularly the case in femoral hernia.

He said he had abstained from incising the neck of the sac in femoral hernia, but had made divulsion by simply insinuating the index finger through the free opening made in the sac until it entered the abdominal cavity, and had had no trouble in effecting reduction of the intestine, the object of the procedure being to avoid division of the obturator artery should it be abnormally situated. He coincided with Dr. Hyde that hernia is not *per se* a dangerous operation. Dr. Gouley said further that if it seemed necessary in a case of inguinal hernia, after herniotomy, he would open the abdominal cavity in order to relieve the strangulated intestine.

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### *THE PREVENTION OF MAMMARY ABSCESS.*

In our last issue we referred to the method of prevention of mammary abscess recommended by Dr. Edis, by the use of support by means of a bandage or towel. Dr. Edis appears to have used this method after every delivery, and, by beginning it before lactation was established, with assured success. Occasionally, however, one is called to cases where abscess is on the point of forming, either from neglect or injudicious treatment, and where, consequently, something more is required. Under such circumstances, Mr. Philip Miall (*British Med. Journ.*, November 21, 1885) states that he has repeatedly seen all the symptoms of a hot, heavy, inflamed breast, with redness of skin, throbbing and deep-seated pain, pulse being 120 in the minute, all disappear in the course of a few hours under fomentation of hot water and ammonia. An ounce of carbonate of ammonia is dissolved in a pint of boiling water, and when solution is effected the temperature will scarcely be too high for fomentation with cloths dipped in the liquid. These must be assiduously applied for half an hour at least, and repeated for two or three hours if necessary. It is well to protect the nipples, though Mr. Miall states that he has never known them to be injured. Relief is immediate, and more than three applications are seldom required. According to Mr. Miall, unless applied too late or improperly, or some foolish rubbing or drawing with the breast-pump be used, this remedy may be thoroughly relied upon.

### *THE ANTIPHLOGISTIC ACTION OF MENTHOL.*

Dr. Selwyn A. Russell, of Albany, New York, writes to the *Medical Record*, November 21, 1885, to call attention to the use of menthol as an antiphlogistic and anodyne remedy in superficial inflammations, in which, he says, its effects are truly remarkable. "My discovery of its value in such conditions was quite accidental; a patient who was suffering from acute aural perichondritis, failing to obtain relief from the usual anodyne applications, bethought himself of menthol, which he applied by means of the ordinary pencil; the relief from pain was immediate, and from that time, to my surprise, the inflammation quickly subsided. I have since made frequent use of it, and I believe inflammations have aborted which, without it, would have ended in abscess; and in addition the pain, itching, heat, and swelling have been considerably reduced. I have used the ethereal solution (alcohol is also a good solvent) in the strength of from ten to fifty per cent., applying it by means of a camel's-hair pencil. The applications may be made two or three times a day, or more or less frequently according to the indications. A solution in one of the fixed oils may be used on mucous membranes. I have observed the good effects of menthol more especially in boils, carbuncles, excessive inflammation following vaccination, etc. The employment of this substance in superficial neuralgias, for its anodyne effect alone, is often very satisfactory, but its use in this way has been noticed and written upon by others."

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### *ON THE PROPERTIES AND PREPARATION OF PEPTONE.*

The medicine, or rather aliment, called peptone, has of late been so frequently referred to in the medical press, that it is well to gain a clear perception of its properties and method of preparation. We abstract from the *Pharm. Zeit.* of November 25 the following instructive items on peptone:

It is usually assumed that peptones are gained by hydration from albumen, such as egg-albumen, caseine, proteine, and meat-albumen, and that this hydration takes place, if pepsine, pancreatic juice, or papaya-juice, in an acid solution, are made to react on the mentioned albuminous substances. This assumption is all the more justifiable, as peptone can be retransformed into albumen by dehydrating substances. It was believed for a long time that the latter reaction took place within the human economy until Hofmeister proved experimentally that peptone passes the kidneys unchanged, unless the white blood-corpuscles of the intestinal mucous membrane have appropriated it. According to this author, then, no such retrograde change as formerly believed takes place.

The mode of preparation of peptone is very variable. Some use eggs, some meat, others again milk, while papaya-juice, pepsine, or pancreatic juice are selected by still other manufacturers. It is clear that the preparations of peptone are consequently very different in concentration and physiological action.

The chemical properties of an eligible peptone preparation are as follows:

1. Mixed with at least two parts of water, peptone ought to form a perfectly fluid non-gelatinous liquid.

2. A ten per cent. solution should not grow turbid on the addition of acetic acid, muriatic acid, or ferrocyanide of potassium.

3. On the addition of a solution of picric acid or of tannic acid, yellow flocculi should appear.

4. With sulphate of copper in strong potash solution a violet color should result.

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### *THE TREATMENT OF HABITUAL CONSTIPATION.*

The treatment of constipation is one of the most ordinary, and, at the same time, one of the most important and puzzling problems in clinical practice. It is the common fault of the great proportion of the very numerous remedies in the therapeutic arsenal employed with this object that they either produce too rapid, too violent, or too drastic an effect, that they are weakened in their after-result, and that they will not produce their characteristic effects over any lengthened period of time. The remedies which appear most satisfactory for relieving this condition are the various mineral waters, especially those containing a large percentage of sulphate of magnesium and sulphate of sodium. The natural mineral waters which are familiarly known throughout Germany as "bitter waters," the best known being Pullna, Hunyadi Janos, and Friedrichshall, have already acquired great popularity as efficient aperients, the sole objection which is urged against them being that their activity becomes impaired through continuous use: this defect has, however, recently been shown to be capable of correction

when the mineral waters are combined with the chlorides; and, of all the natural waters, Friedrichshall appears to be the best, as it has been found not to lose its aperient properties through continued use, or even to require an increase of dose. MR. ALFRED S. GUBB reports a number of cases in the *Medical Press*, November 11, 1885, where he has employed it with extremely satisfactory results as a corrective of habitual constipation.

Mr. Gubb administers it in doses of from half a tumbler upwards, taken early in the morning, and combined with an equal proportion of hot water, this being the most effectual method of administering Friedrichshall water for this purpose. He has used it largely for persons of both sexes, and it seemed to be especially advantageous as a mild laxative, exceedingly well fitted for all ordinary cases, and this more particularly for persons of delicate constitution, for women, and for all other persons in whom the object is to produce an aperient effect which should not be drastic or productive of constitutional disturbance. It is often a great object to be able to produce a distinct laxative impression without disturbing the digestion or interfering with the ordinary daily occupation of patients engaged in business pursuits. Here he has found that Friedrichshall water produces its effects by rendering more fluid the intestinal evacuations, and by freeing the intestine of its contents without interfering with the process of digestion or impoverishing the blood. These qualities render it peculiarly suitable for administration to weak or anæmic persons in whom it is important that the laxative employed should not be too concentrated or its influence on the mucous membrane of the intestine too strong.

The mildness of the effect of Friedrichshall water in these cases is, according to Mr. Gubb's observations, well marked. In no case, even after prolonged use, did it prove in any way excessive, and when its use is abandoned for a time, the constipation only recurs gradually when its regulating action on the intestines has given place to the habit of the body or errors in diet which produced the tendency to constipation in the first instance. The non-occurrence of the reactionary constipation which so generally follows the habitual use of aperients is doubtless to be attributed to the large quantity of chlorides present in Friedrichshall water, and to their favorable influence on the progress of digestion and diffusion. In short, the class of cases in which he has found this water of especial service comprises hemorrhoids accompanied by habitual constipation, hepatic congestion, and in the constipation of pregnancy, which is so often complicated by derangements of the digestion, headache, and dyspnœa. There are many cases of cardiac disease and of cardiac irritability in young people in which it is very serviceable in continuous and diminishing doses. It has long had a high reputation in the treatment of gravel, and for the prophylactic treatment of renal calculi, but of this Mr. Gubb is unable to speak from experience. It has appeared to produce a favorable impression in the numerous cases of strumous and glandular swellings, where we have to contend with a sluggishness of the bowels and of tissue-change generally. Here Friedrichshall water acts as a stimulant as well as an aperient. A certain diuretic effect which is manifested is not uncommonly of service in cases where it is desired to increase the proportion of watery constituents of the urine. It is less adapted to cases of renal disease where our object is to produce copious watery evacuations of a drastic nature, but to lessen venous congestion by gentle and continuous means Friedrichshall water is peculiarly indicated, and is perhaps without a rival.

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### *THE TREATMENT OF CHRONIC SPRAINS.*

MR. C. W. MANSELL MOULLIN read an interesting paper on the pathology and treatment of chronic sprains at the last annual meeting of the British Association, which contains many points of interest (*British Medical Journal*, November 21, 1885).

Muscular wasting is one of the main and prominent symptoms in chronic sprains which calls for treatment, and is a serious complication to the condition of which muscular debility is the main feature. It tends to perpetuate the trouble, and aggravate it in every way. Fortunately, in galvanism, systematically and regularly applied, there is a powerful ally. Meantime, by means of rest, counter-irritation, pressure, and the use of absorbents, the inflammation can be reduced and the effusion absorbed; and then attempts must be made to restore the muscular system to its normal strength by all the means in our power; orderly and well-regulated exercise, arranged with a view to definite ends, never carried too far, either in extent or time; massage, to improve the circulation; galvanism, to restore the tone; cold bathing, shampooing, and, above all, tonics, fresh air, and

good food. Like most other things, it is easier to prevent than to cure; and, provided due attention be paid and a little watchfulness exercised, there need be no apprehension of this condition supervening, even if growth be as rapid as it often is at the time of puberty. Regular and systematic exercise is all that is required, taking care to avoid sudden violent strains and overfatigue of any special set of muscles.

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*ON THE INFLUENCE OF ANTIPYRIN ON THE TISSUE-CHANGES AND ASSIMILATION IN FEVER PATIENTS.*

Antipyrin having undoubtedly secured a prominent place among our antipyretic medicines, it is desirable to study the general influence which the drug exercises on the economy in the state of fever.

Dr. Walter, of St. Petersburg (*Wratsch*, No. 30, 1885), gave antipyrin to four fever-patients (pleuro-pneumonia, pleuritis, typhoid fever, and tuberculosis) in doses of 3 to 8 grms. (45 to 120 grs.) *pro die* without observing any unpleasant after-effects, except some nausea and sweating. On heart and brain no noticeable impression was made by the drug; but alongside of the reduction of the febrile temperature Walter observed also a reduction in the nitrogenous tissue-changes, and ascertained, likewise, that the assimilation of proteids was materially favored by the drug.

We regret to have at present no details yet of these interesting investigations.

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*RECURRENT LARYNGITIS AND OBSTRUCTION OF THE NARES.*

Dr. E. Fletcher Ingals read a paper before the Illinois State Medical Society on the above subject, of which the following are the conclusions (*Journal of the American Medical Association*, December 5, 1885):

1. Recurrent laryngitis is usually dependent upon obstruction of the nasal cavities.

2. This obstruction, in the majority of cases, is caused either by deflection and thickening of the septum, or by what is known as hypertrophic catarrh.

3. To effect a permanent cure the obstruction must be removed.

4. The operative procedures necessary for the removal of these obstructions may be made painless by the use of hydrochlorate of cocaine.

5. This method of treatment, properly carried out, may be relied on to cure the catarrh and the laryngitis which it has caused.

6. Great improvement in the general health often results from the removal of the nasal obstruction.

7. In acute colds or exacerbations of hypertrophic catarrh, immediate relief may be obtained by the insufflation as often as needed of small quantities of cocaine.

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*THE APPLICATION OF ACUPUNCTURE TO THE TREATMENT OF CERTAIN FORMS OF CHRONIC RHEUMATISM.*

Dr. G. Lorimer, in a paper with the above title read before the Section of Medicine at the last meeting of the British Medical Association in Cardiff (*British Med. Journ.*, November 21, 1885), calls attention to a mode of treatment of chronic rheumatism which at one time seemed to enjoy considerable popularity, but which has latterly fallen into disuse. Dr. Lorimer thinks that in this method we have a very valuable mode of treatment, and he reports twelve cases of various forms of chronic rheumatism, in nearly all of which improvement and freedom from pain resulted. Dr. Lorimer summarizes as follows the results at which an extensive experience in its use has led him to arrive:

In chronic rheumatism of the muscles and their fasciæ and aponeuroses, there are usually three conditions present: 1, pain; 2, impaired mobility or muscular disability; and, 3, impaired nutrition, leading to muscular atrophy. The last condition is not always present, and is most marked in cases of a pronouncedly chronic character. The first two conditions may occur separately or conjointly. They may coexist in equal degree, or they may occur each in greater or less degree.

Acupuncture may be employed with advantage for the relief of pain for the removal of muscular disability; and, with the removal of the latter condition, muscular atrophy is usually improved. Acupuncture, however, is less certain and efficacious in the relief of pain than in the treatment of muscular disability. For the relief of the latter condition, however, as well as sometimes for the former in rheumatism of the lumbar muscles, of the muscles of the thigh, and of the muscles of the arm and shoulder, the effects are sometimes signally efficacious.

With regard to the last-mentioned situation (namely, the shoulder), the relief from muscular disability is most marked when the disablement is referred to a point situated in the central or lower part of the deltoid muscle.

When situated in the upper part relief is less frequent, and when above the scapular spine it is very seldom obtained. The certainty of relief is in proportion to the limited area of obstruction to movement; if, however, the area of obstruction to movement be extended and indefinite, success is less likely to result. In some cases galvano-puncture succeeds when acupuncture fails.

After the removal of the needle at the seat of puncture there frequently appears a red areola, from half an inch to two inches in diameter. The appearance of this areola bears a direct relation to the success of the operation. It is generally absent in cases where the action is inert, and the result negative.

In the removal of muscular disability the action of acupuncture is immediate. The maximum amount of muscular power, however, obtained from its application is gradual, being from ten minutes to one hour after the removal of the needle.

It is doubtful if any benefit is obtained from retaining a needle beyond two minutes in the treatment of cases of muscular disability. More benefit is obtained from increasing the number of needles than prolonging the time of their insertion. With regard to relief from pain, however, the converse is true.

When extensive muscular atrophy is present, relief is doubtful. When the latter condition is present, and is an obstacle to improvement, galvano-puncture may succeed after acupuncture has failed. For the relief of pain several applications may be required, each of some hours' duration. Cases which most frequently receive benefit in relief from pain are those of subacute inflammation of fibrous tissue, myalgia, and anomalous forms of rheumatism, which sometimes attack the surrounding structures of articulations subsequent to injury. In some instances, after the application of acupuncture-needles, pain may be removed, but it may pass to the corresponding situation on the opposite side of the body.

After the application of the needle there is generally experienced, at the point of insertion, and for some distance from it, a feeling of coldness or numbness, or a sense of prickling or heat. Syncope seldom occurs from the employment of acupuncture.

Acupuncture is less frequently followed with beneficial results in muscular disability, and muscular atrophy consequent on sciatica.

The needles employed are about two inches in length, or longer. They are set in round handles, and should be introduced with a gentle rotary motion.

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### *TUBERCULAR MENINGITIS CURED BY IODOFORM.*

A Swedish physician, Dr. Emil Nilsson, alleges that he has cured an undoubted case of tubercular meningitis by frictions on the shaved scalp with iodoform ointment (1 to 10). The patient was a boy, aged 8, whose mother had a family history of phthisis, and four of whose brothers and sisters had died from tubercular meningitis. The symptoms in this child's case were similar to theirs,—headache, torpor, convulsions, strabismus, and pyrexia. He was at first treated with calomel and iodide of potassium, but did not improve; and, after having been under treatment a week, became distinctly worse, being unable to take food or medicine. The pallor of the face, which had pre-existed, gave way to flushes of the cheeks. The child threw himself out of bed, and presented several clonic spasms of the limbs and of the facial muscles. The head was then shaved, and iodoform ointment rubbed in, an oil-skin cap being put on. The friction was repeated three or four times in the day, and the next day there was a decrease in the convulsive movements, the sleep was calmer, and the spasmodic contractions, which had previously been excited by the slightest noise, now ceased to be so. Consciousness shortly afterwards returned, and the child's face became of a more natural color. This, however, was accompanied with a severe coryza, redness of the lips, and an irritable cough, the breath smelling strongly of iodoform. The ointment was discontinued, and syrup of iodide of iron given. The unpleasant symptoms rapidly disappeared, and the child was soon running about in good health.

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### *HEMORRHAGIC AMBLYOPIA CURED BY DILATATION OF THE SPHINCTER ANI.*

The following case seems to well illustrate two points: first, the serious amount of amblyopia liable to be produced by frequently-recurring hemorrhages extending over a long period of time; and, second, the value of the surgical procedure of free dilatation of the sphincter ani under ether. Mr. Robert N. Hartley (*Med. Times and Gazette*, November 28, 1885) was consulted by a man who was gradually losing his eyesight, the distant vision of each eye being only equal to twenty-seventieths, while no type smaller than 14

Jäger could be read. There was nothing, however, in the appearance of the eyes to account for so much defect except a slight pallor of the disks. Questioning elicited the fact that for ten years he had suffered from repeated bleedings from the anus, and the bowels were never moved without great pain, and seldom without bleeding, sometimes slight, often profuse, and for the last three months he had frequently to leave his work and go home on account of severe bleeding. He was constantly taking either purgatives or astringents, and the introduction of the finger into the bowels caused such intense pain that a thorough examination was impossible without an anæsthetic. A few days later he was put under ether, and Mr. Hartley found an enormously powerful sphincter ani, the internal fibres being especially marked as rigid rings extending for some distance up the bowels. Mr. Hartley freely and thoroughly stretched, with the fore and middle fingers of each hand, the rigid sphincter until all signs of resistance had ceased and all the fingers of one hand, in the form of a cone, could be easily pushed into the rectum. The congested and swollen mucous membrane now protruded, and the surface of it was seen to be here and there marked by ulcerated patches, which had been no doubt the chief source of the hemorrhage. Nothing more was done except the swabbing of the parts with carbolized glycerin. After three days' rest in bed the bowels moved spontaneously for the first time with little or no pain and no bleeding, and six weeks afterwards he reported that he had never bled once since the operation, had never taken a dose of medicine, that his bowels acted every morning without pain or difficulty, and that his sight was perfectly normal.

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### *ELECTRICITY AS A THERAPEUTIC AGENT IN GYNÆCOLOGY.*

From an elaborate study of the value of electricity as a therapeutic agent in gynæcology, Dr. Paul F. Mundé draws the following conclusions (*American Journal of Obstetrics*, December, 1885) :

1. Electricity locally applied is a valuable agent in gynæcological practice, and should be more widely used than it is.

2. It does not require special knowledge or experience as an electrologist to be able to use the agent safely and beneficially in gynæcological practice.

3. The remedy, if properly used and on correct indications, cannot do harm.

4. It should be used only in chronic conditions, and if it is the galvanic current, should give no pain.

5. The conditions in which the faradic current is indicated are chiefly those characterized by deficient development or want of tone of the sexual organs, such as imperfect development of uterus and ovaries, superinvolution, subinvolution, amenorrhœa, uterine displacements, interstitial fibroids. The object of the faradic current is to stimulate the organs to increased growth or activity, and to produce muscular contraction.

6. The conditions in which the galvanic current is indicated are those in which it is desired to promote absorption of adventitious products, chiefly the result of previous inflammation, to allay pain, to excite reparative action, and occasionally to act as a caustic. The rapidly-interrupted galvanic current, however, also excites muscular contraction.

7. Perseverance in the treatment is essential to success.

8. Acute and subacute inflammatory conditions, as a rule, counterindicate local treatment by electricity.

9. The pathological conditions in which electricity proves useful are those in which other treatment often fails, or cannot be borne by the patient.

10. In organic diseases, a permanent cure, or a restoration of the diseased organs to perfect health, can usually not be accomplished by electricity ; but great relief from pain, and certainly temporary improvement in otherwise intractable cases, can be achieved by it without danger, and with comparatively little discomfort to the patient.

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### *THE OLD AND NEW TREATMENT OF CORYZA.*

In the *Deutsche Mediz. Zeitung* of November 30, 1885, we find an interesting letter of Dr. Krakauer, of Berlin, on the treatment of coryza, embracing his experience on himself and a number of patients.

This physician was affected with a chronic rhinopharyngitis, which showed a violent exacerbation every two or three months. Two minute doses of belladonna, taken in intervals of four hours, always succeeded in checking the highly inconvenient secretion of the nose (which was strong and copious enough to produce an eczema of the nares and upper

lip), but did not in any way abort or shorten the coryzic process itself. The nose remained as stopped up as before.

With cocaine, however, Krakauer obtained much more satisfactory results. As soon as the exacerbation was noticed to set in (sensations of tightness and itching in the nose, and inclination to frequent sneezing), he inserted into each aperture of the nose a tampon three to four cm. long, saturated with a five to ten per cent. solution of cocaine. In every instance all the mentioned symptoms were invariably suppressed, and the coryza itself prevented from actually setting in. The tampon was allowed to remain *in situ* for four to five hours, and no further medication was needed.

The same procedure has since proven a success in a number of coryza cases that came under the observation of Dr. Krakauer. Applications of tampons saturated with a ten per cent. solution of menthol were found to give equally satisfactory results in coryza. Both applications deserve to be borne in mind.

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### *THE PRESENT STATE OF THE ERGOT QUESTION.*

Dr. Rudolph Kobert publishes in the *Practitioner* (December, 1885) the following summary of the results of his investigations as to the influence of the different constituents of ergot upon the pregnant uterus:

*Ergotinic Acid.*—Dr. Kobert has administered this substance and its sodium salt internally and hypodermically to pregnant bitches, rabbits, cats, and sheep. The doses given were at first small, and then increased, until finally they were toxic. The result of all these experiments entirely agreed with his former ones. When administered internally, even the largest doses are well borne, without the supervention of uterine contractions and without any material disturbance of the mother. At most the stools become semi-fluid. When injected subcutaneously, relatively large doses cause complete narcosis, lasting twenty-four to forty-eight hours, during which reflex action ceases. Nevertheless, neither contraction of the uterus nor expulsion of the young occurs.

After very large doses the blood-pressure falls very low, and, as a consequence, the young die, but are not expelled.

From these experiments it will be seen that ergot of rye does not owe its ecbolic power to the ergotinic acid contained in it, and that we may consider as clinically worthless all preparations of ergotinic acid and of sclerotinic acid (so called) and all aqueous extracts which do not contain these principles which are soluble in alcohol. Hence it follows that the extractum secalis cornuti of the Pharmacopœia Germanica, Editio II., is worthless.

*Cornutine.*—This substance is now prepared and supplied commercially by Gehe & Co., Dresden, and is not to be confounded with the very different ergotinine of Tanret. The latter is quite inert. The former, however, produces uterine contractions both in animals which are pregnant and in those which are not pregnant, but with this difference, that in the latter the contractions are accompanied by coincident vomiting, diarrhœa, salivation, and irregularity of the pulse; but in the former the irritability of the uterus is much increased, and, as a consequence, the uterine movements come on after doses so small that no other symptoms at all appear. Consequently, it was always possible, in dogs and cats, to bring about the expulsion of the fœtus without seriously jeopardizing the life of the mother, when the cornutine was injected subcutaneously. It was a matter of no consequence whether the young were mature or not. The amount necessary to this result was less than an eighth of a grain. Gehe's preparation not being as yet a chemically pure one, must be administered in larger doses.

*Sphacelinic Acid.*—This is a resinous body, insoluble in water, and consequently must be administered by mouth in the form of an emulsion. In dogs and cats a sufficient dose never failed to evoke powerful labor-pains in the pregnant uterus, followed rapidly by the birth of the fœtus; yet, not one of the mother-animals lost her life in consequence. The contractions after this substance Dr. Kobert describes as being tonic, and after the cornutine as being clonic.

From the foregoing it will be seen that in the ecbolic action caused by ergot both cornutine and sphacelinic acid take part.

Dr. Kobert states that cornutine acts by influencing directly the centre for the uterine contractions situated in the spinal cord; but sphacelinic acid acts directly upon the uterus itself. And the combined action of these two substances is necessary if it is wished to produce the action of ergot upon the uterus and yet avoid any other untoward effects. Therefore the only rational preparation for use in cases of parturition is one which contains all the cornutine and sphacelinic acid but no ergotinic acid, for the latter is very injurious to the stomach and has no influence upon the

uterus. Such a preparation, when administered internally, was, when fresh, exceedingly active, producing abortion with absolute certainty in pregnant animals. In the form of pills, it has been employed with success in man to stop hemorrhages in various organs, and also in the treatment of vascular dilatation in cutaneous diseases. Unfortunately, it does not keep well for more than six months, and must each year be prepared afresh. A preparation a year old is almost absolutely worthless. It is necessary to state that neither ergot itself, nor any of the numerous commercial and European and American preparations which Dr. Kobert has examined, have retained their therapeutic powers for more than twelve months. Of course the ergotinic acid remains unaffected, but this is valueless.

The preparation of an active extract depends upon the solubility of cornutine and sphacelinic acid in absolute alcohol, in which latter ergotinic acid is insoluble.

It is only necessary to bruise well the fresh ergot, and to exhaust thoroughly with the strongest alcohol. After evaporation of the alcohol at a low temperature, there remains a residue, consisting of the inert fatty oil, and the whole of the cornutine and sphacelinic acid. A portion of the oil may be previously got rid of by extracting with ether, but at the sacrifice of a small amount of the active substances. The extract thus prepared is not well suited for subcutaneous injection. The dose cannot be foretold, because the proportion of active principles present in ergot varies exceedingly with the year and the district.

As the extract of ergot is usually prepared in November, it is to be hoped that this article will be of the greater utility.

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### *CONVALLARIA MULTIFLORA IN HEMORRHOIDS.*

Dr. J. W. Hamer (*Columbus Med. Journ.*, December, 1885) has used a decoction of the root of convallaria multiflora with considerable success in the internal treatment of patients suffering from piles. His method of administration was to boil one or two ounces of the root in a pint of sweet milk, to be drunk in the course of a few hours, taking about two ounces at a time, a fresh decoction being made every day. Dr. Hamer reports six cases, in four of which great relief was obtained, while in the other two no fair test was given the drug. He finds that it acts best in those persons who have a sluggish condition of the portal system and have frequent bilious attacks. He believes that it does not cure hemorrhoids by relieving the patient of constipation, for where constipation was found it still existed after the patients were cured, but that it acts by restoring tone to the flaccid condition of the hemorrhoidal veins. The drug should be used for at least one week before stopping its use, and the fresh root should be employed in all cases, as by long drying it appears to become inert.

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### *PURE TEREBENE IN THE TREATMENT OF WINTER COUGH.*

Dr. William Murrell states, in the *British Med. Journ.*, December 12, 1885, that he has notes of one hundred and fourteen cases of winter cough which were all treated with pure terebene, a substance prepared by the action of sulphuric acid and oil of turpentine. He states that it is an agreeable remedy, being a clear, colorless liquid, with an odor like that of fresh-sawn pine wood. It will not mix with water, but as the dose is small it can readily be given on sugar. This must not be confounded with the patent medicine sold under the name of terebene. The best method of indicating the sphere of action of this drug and of illustrating its utility will be to give a brief abstract of the notes of one of Dr. Murrell's cases.

R. N., aged 43, a commercial traveller, stated that he had been subject to cough every winter for twelve years. His work was against him, and he was a good deal exposed to wet and cold and the inclemency of the weather. His cough used to trouble him badly only in the winter, but year by year it seemed to be coming on earlier, and now he was hardly ever free from it. It came on in fits, which shook him to pieces, and it was always very bad the first thing in the morning, often making him retch and vomit. There was a great deal of phlegm, thick and yellow, when he was in the country, but speckled all over with black in London. It was difficult to get up, unless he could get some hot tea or something to loosen it. The shortness of breath was worse than all, for it prevented him from going about, and interfered with his business. He had never spat any blood worth speaking of, but there were at times streaks after a severe bout of coughing. He became no thinner, generally losing a little in the winter, and picking up again in the summer. He had had a great deal of treatment, and mixtures, lozenges, and liniments

without end. On examining the chest, it was found to be emphysematous, and there was a loud bubbling rhonchus at the base of each lung. On November 1 he was ordered 10 drops of pure terebene on a piece of sugar every four hours. In three days he returned, and said there had been a marked improvement; the cough was easier, the phlegm was lighter in color and not so thick, and the breathing was decidedly better. The dose was increased to 20 minims every four hours, and a week later the patient wrote to say that he was better than he had been for years, and was almost able to do without the medicine. Dr. Murrell saw nothing of him again until January 6, when, being in town, he came to see him. There had been some return of the old symptoms, and he was anxious for further treatment. Dr. Murrell ordered him a small Maw's spray-diffuser, holding about an ounce, and instructed him to use it with the terebene, as an inhalation, several times a day. A fortnight later he wrote, saying that he had bought a larger apparatus, and that his complaint was more amenable to treatment than it had ever been before. The terebene-spray eased the cough, brought up the phlegm, and, above all, relieved the shortness of breath. On his long railway-journeys, when he was unable to use the spray without inconveniencing his fellow-passengers, he rubbed the terebene on his moustache and beard, so that it might slowly diffuse, and, as he said, "softened the atmosphere."

One of the great advantages of pure terebene is that it is not a bulky medicine. An ounce bottle, carried in the pocket, will last for days, and is always ready for use. It is best to begin with 5 or 6 drops on sugar every four hours, and gradually to increase the dose to 20 minims. This is, for most people, the maximum quantity, but the drug has little or no toxic action, and one patient was so enraptured with his remedy that he insisted on taking a teaspoonful every four hours for a week. The only disadvantage Dr. Murrell has ever noticed from its employment is that it gives a peculiar and characteristic odor to the urine, a circumstance which patients never fail to mention. When used as a spray, from 1 to 2 ounces should be diffused and inhaled every week. In some instances he has tried giving it mixed with an equal quantity of olive oil, flavored with oil of peppermint. In twenty-five cases he has given the terebene in the form of an emulsion, made by mixing it with a little tragacanth powder, adding water and shaking well. Each ounce of the emulsion contained a drachm of the terebene, and it was usually given in ½-ounce doses, four times a day. The results were excellent, but not better than with the simple terebene itself, and he saw no reason for continuing the use of a more expensive preparation. In every case of winter cough in which the terebene-spray was used systematically there was a marked improvement. In many instances it was noticed almost immediately, but in other cases, especially the very chronic ones, the patient had to continue using his remedy for some weeks. Even when there was marked emphysema, with little movement of the chest-walls, some benefit was experienced. He treated eighteen cases of phthisis by the same method, and the results were certainly most encouraging. It did most good when there was old consolidation, when no active mischief was in progress, and especially when there was no elevation of temperature. He has also used it as a dry antiseptic inhalation on the cotton-wool of a respirator in phthisis, and has been much pleased with the results. In one case, that of a young lady, the respirator was worn almost continuously night and day for nine months; and the right lung, which was breaking down, cleared up, the temperature becoming normal, and the cough and other symptoms subsiding. Dr. Murrell thinks that terebene may be useful in checking hemorrhage from the lungs, but has no data to offer.

Many sufferers from winter cough also complain of acidity and flatulence. He soon found that the internal administration of pure terebene was an excellent remedy for this combination of symptoms. It checks the formation of flatus so quickly, and is so efficacious in expelling any that may remain in the stomach or intestines, that he constantly employs it in cases of dyspepsia when flatulence is a prominent symptom. Patients like it, and often continue taking it for months or years. It acts as an antiseptic, probably in much the same way as glycerin, oil of cajeput, and oil of eucalyptus. He evinces surprise that it has not come more largely into use in the treatment of flatulence.

Pure terebene is of such value in winter cough that he rarely resorts to other remedies. This year, however, he has tried a combination consisting of equal parts of pure terebene, oil of cubebs, and oil of sandal wood, mixed with liquid vaseline. This he uses in an atomizing apparatus invented by Mr. W. F. Semple, of Ohio, an apparatus which is somewhat complex and difficult of descrip-

tion, but may be said to consist essentially of a jar in which the medicated fluid is finely atomized by a blast of air propelled by a rubber ball. A nose-tube is attached, and the fine spray is inhaled either through the mouth or nostrils. It is certainly one of the best forms of spray-apparatus ever invented, and, when used with a cocaine solution, will be found wonderfully efficacious in the treatment of hay-fever and coryza. The formula Dr. Murrell has given yields excellent results, not only in winter cough, but also in post-nasal catarrh. He has made some observations on this point, in conjunction with a well-known tenor, and has been astonished to note what a marvellous difference there is in the tone of his singing-voice after using it for only a few minutes. It is a powerful expectorant, and, if inhaled the first thing in the morning, when the mucous membranes are covered with thick, viscid secretion, will give very great relief. Pure terebene is a valuable remedy, and will in time come largely into use.

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*SUPPURATION AROUND THE VERMIFORM APPENDIX TREATED BY ABDOMINAL INCISION.*

At the meeting of the Clinical Society of London held December 11, 1885, Dr. Thomas Barlow and Mr. R. J. Godlee (*Med. Times and Gazette*, December 19, 1885) read a paper relating to a man, aged 20, whose previous history was unimportant, except that for the last two years he had been subject to attacks of diarrhœa and vomiting. His illness began rather acutely on September 12, 1885, with loss of appetite, severe abdominal pain, and, later, vomiting and absolute constipation. He was admitted into University College Hospital on the 15th, with a temperature of 102.4°, intense abdominal pain and tenderness, intermittent bilious (not stercoraceous) vomiting, and tight distention of the abdomen. There was a small patch of slight redness in the right iliac fossa. The diagnosis appeared to be between mischief about the appendix and constriction of the intestine by a band high up. He was given opium and iced beef-tea, and ice was applied to the abdomen. The temperature fell to normal, and the pulse was about 90, full and soft, the tongue dry, and the color good; but, as the symptoms were unrelieved, an exploratory incision was made in the middle line on the night of the 16th. General early peritonitis was found, but lymph only in the neighborhood of the cæcum, surrounding a collection of fetid pus. The vermiform appendix was much thickened. A second incision was made over the right iliac fossa, and a large drainage-tube was inserted through it, reaching down to the appendix, a smaller one being placed in the median incision, which was closed with sutures. The peritoneum was first washed out with a solution of corrosive sublimate (1 to 500). The patient made an excellent recovery, the temperature remaining normal, and the pulse about 90. He was fed principally by the bowel for some time; beef-tea and arrowroot were allowed on the twentieth day, and minced meat a fortnight later. No drugs were given except morphine for the first two days. Thirst was allayed by means of warm-water enemata. He had slight albuminuria a day or two after the operation, and a little later a parotid bubo occurred, which did not suppurate. It was claimed that the uncertainty of the diagnosis justified the exploration, and that the early evacuation of the putrid pus rescued the patient from a condition of very great danger, and prevented the matting together of the intestines, which would otherwise have occurred. The freedom with which the peritoneum might be treated was pointed out, and the advisability of withholding food from the stomach for a prolonged period in such cases was insisted upon. Remarks were also made upon the absence of peritonitis and the presence of albuminuria as points in the diagnosis, and upon the relation between inflammation of the parotid and diseased states of the peritoneum.

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*THE PHYSIOLOGICAL ACTION OF GRINDELIA ROBUSTA.*

Dr. John A. Buffington arrives at the following conclusions in a graduation thesis as to the physiological action of Grindelia robusta (*American Journ. Med. Sci.*, January, 1886): Grindelia was found to be not actively toxic. The lethal dose of the fluid extract, the preparation used in the experiments, was ʒii to ʒiii for rabbits weighing twenty-eight ounces to thirty-two ounces, and ♏x to ♏xv for frogs weighing one ounce; and the time required to cause death was one to three hours in the former, and half to one hour in the latter.

Grindelia first lessens, then destroys sensibility, the action beginning in the peripheral end-organs, then involving the trunk of the nerves, and ultimately the spinal cord. Motility is affected in the same order, the paraly-

sis beginning in the nerve-terminals, then involving the nerve-trunks, and finally the motor centres in the spinal cord.

The heart is slowed because of an increase of inhibition, due to stimulation of the cardiac inhibiting centre, and the blood-pressure is raised, chiefly by stimulation of the vasomotor centre in the medulla. The respiration is increased in frequency by an action of the agent on the respiratory centre, and also on the terminals of the pneumogastric in the lungs. Toward the end the respiration becomes slower, and is jerky in character, and death ensues by arrest of respiration, the heart continuing its action some time longer.

The cerebral effects of grindelia are quite pronounced. A condition of narcosis, more or less profound, ensues as the effects of the drug develop. This action appears to be due to a direct impression made on the cells of the cerebral lobes.

A marked increase of the urinary secretion was noted in all the animals experimented on. As some constituents of the drug appear in the urine (the resin?), a direct action on the renal structure may be admitted. The increase in the blood-pressure is another factor, and, it may be, the chief one.

This investigation throws light on the nature of the curative effects exerted by grindelia in asthma, for the relief of which hitherto it has been chiefly used. The cerebral, the cardiac, and the renal actions, however, suggest its use in other maladies.

## Reviews.

PRACTICAL SURGERY, INCLUDING SURGICAL DRESSINGS, BANDAGING, FRACTURES, DISLOCATIONS, LIGATURE OF ARTERIES, AMPUTATIONS, AND EXCISIONS OF BONES AND JOINTS. By J. Ewing Mears, M.D. Second Edition.

Philadelphia: P. Blakiston, Son & Co.

The propriety of writing condensed and brief descriptions of surgical affections and their treatment has always been a questionable proceeding with us; but every now and then a work, the merits of which are undeniable, is placed in our hands, and we are compelled to grant its author the praise due him. To this class we would assign the work of Dr. Mears. Our author has not attempted too much. He has limited himself to the above-named subjects; and his work, while concise, is not slighted, so that the book cannot fail to aid the student in acquiring a knowledge of the subjects which it treats. Indeed, the busy practitioner may with benefit turn for information to its pages.

Part I. considers "*Surgical Dressings.*" This most important element in the successful results of treatment in all surgical operations cannot be too urgently insisted upon; and all information relating to the subject ought to be sought after by the surgeon. Dr. Mears has given us a very full section upon the various means we may employ and their methods of application. Antiseptic dressing of wounds has, as it should, been well and minutely dwelt upon. Full directions in the application of Lister's dressing, and also modifications of the same, are given. The various agents that have been employed and advocated by different surgeons, in order to assist in the healing of wounds, and the method of preparing them, are given. We are glad to see our author calls attention to the means of drainage introduced by Mr. Chiene, who employs catgut arranged in a special manner, which we regard as one of the best, if not the best, method of drainage yet devised. The buried suture introduced into surgery to obviate the employment of any drainage substance whatever is a method of dressing which we can, from our personal knowledge of its use, speak most favorably of, and regret Dr. Mears has not given a description of its application.

Part II. treats of "*Bandaging,*" in which the methods of applying the *roller*, *Mayor's system of handkerchief dressings*, and *immovable bandages* are fully described. The cuts illustrating the manner of applying the different bandages are numerous, and will be found to greatly aid in comprehending this very important part of the treatment of surgical lesions.

Part III. discusses "*Fractures.*" This section is an addition to the present edition; and while it is, in our opinion, too brief to do justice to this very important division of surgery, yet we have been quite favorably impressed with the arrangement and the writer's descriptions and treatment of these lesions. The part which treats of fractures in general, their cause, symptoms, diagnosis, prognosis, and treatment, appears to us particularly good, and gives evidence of the author's practical experience and acute observation. The advice given under special fractures for their treatment may safely be followed. In fractures of the skull we think it would have been a valuable addition if a more detailed account of the indications for performing the operation of trephining had been included

under these lesions. The transfixing of the nasal bones in cases of their fracture by means of a pin, as advised by Mason, is a most simple and very efficient method of treatment, and far more comfortable for the patient than the means recommended by our author, of pieces of catheter or waxed sponges introduced into the nasal cavity. In the treatment of fracture of the patella Dr. Mears has given us the various methods which are generally employed, but has omitted the more recent treatment introduced by Lister, and now advocated by other surgeons, who have adopted it with unusual results. We refer to cutting down upon the fragments, and wiring them together under strict antiseptic precautions.

Part IV., on "*Dislocations*," is also a new section to this edition. It includes everything of any importance in relation to these lesions. The author's view in regard to the reduction of dislocations is one in which we fully agree. He says, "The success which has attended the employment of manipulation in effecting reduction of recent and also of old dislocations justifies the belief that their [mechanical appliances] application is not necessary in any form."

Part V. treats of the "*Ligation of Arteries.*" It is abundantly illustrated, and contains very concise and comprehensive descriptions of the various procedures for performing these operations.

Part VI. describes "*Amputations*," in which the different operations suitable for the various regions are given. Hemorrhage and the means for its control receives due attention. The after-treatment in amputations, and upon which, in a great measure, depends success or failure, is quite full and explicit; but we have become so thoroughly convinced of the great advantages, both to surgeon and patient, by the employment of antiseptic dressings in this particular variety of surgical operations, that we regret Dr. Mears has not more emphatically insisted upon their employment in every case.

Part VII., the concluding section of the book, on "*Excisions of Bones and Joints*," is a most valuable addition to the present edition. The introduction of antiseptic dressings into surgery has gradually caused surgeons to regard excisions with much more favor than they formerly did, and their adoption in suitable cases has no doubt been the means of saving many useful limbs which would previously have been sacrificed.

In concluding our notice of the above work we congratulate its author upon having very ably and satisfactorily performed his task, and we are confident that students, for whom the book has been more especially written, will receive valuable assistance from a study of its contents.

A Reference Handbook of the Medical Sciences, embracing the Entire Range of Scientific and Practical Medicine. By various writers. Illustrated by chromolithographs and fine wood engravings. Edited by Albert H. Buck, M.D., New York City. Volume i. New York: William Wood & Company, 56 and 58 Lafayette Place, 1885.

The enterprise or the spirit of excessive competition which now prevails among American publishers is yielding a most extraordinary crop of great books. Possibly the spirit which has been aroused by the laboriousness of Dr. Billings in the surgeon-general's office at Washington is becoming epidemic. The latest victim either of this contagiousness or of the publisher's zeal is Dr. Albert H. Buck, of New York City, if indeed his present attack ought not rather to be considered of the nature of a relapse than of an original affection. As the result we find upon our table the quarto volume which is to be followed, we are told, by six volumes like itself.

We have in the title of this volume a further instance of the misuse of the English language, which seems to have come upon us from the German. The work is called a Reference Handbook, when it is really a large and elaborate encyclopædia, containing in the whole of its volumes nearly six thousand double-columned pages of very close, small type.

The illustrations are very numerous. Most of those in the type are judiciously selected, and really add to the value of the work. The chromolithographs in the present volume are four in number. The first is a handsome plate of the Arnica montana, which we suppose has been added for æsthetic purposes. The second represents the blood spectra, and really has a scientific and practical value. The third, being representations of cerebral hemorrhage, we suppose owes its existence to the fondness which is believed to exist among so many Americans for bright red colors; whilst the fourth (types of carcinoma) is well calculated to strike awe, and thereby inspire respect in the hearts of the laity. The articles are written by a number of contributors, and seem to us uniformly good. Some of them are of very great merit. As an example we should mention the article by Dr. Henry upon blood. The chief value of this book to most

of us will be found in the information contained on matters concerning which knowledge is not easily accessible. As an instance of this we may cite the excellent *résumé* of the subject of Army Field Medical Organization, by Surgeon Charles Smart. We know of no book ordinarily to be found in a physician's library which contains so numerous, and usually so satisfactory, accounts of various watering-places and sanitary resorts, as does this one. Thus, in regard to Asheville, North Carolina, we find nearly three pages of condensed information. Concerning Biarritz we have two pages. Full information is given about all the health-resorts for which we have looked, except the Arkansas Hot Springs, and probably a description of this will be found in a future volume, under the head of "Hot Springs" of Arkansas. There is therefore much freshness about this volume, and we trust that it will make itself a home in American literature. We congratulate Dr. Buck upon the wisdom which he has displayed in selecting his contributors, and the success which he has thereby obtained.

THE PRACTICE OF PHARMACY. A Hand-book for Pharmacists and Physicians, and a Text-book for Students. By Joseph P. Remington, Ph.G. With nearly five hundred illustrations.

Philadelphia: J. B. Lippincott Company. London: 15 Russell Street, Covent Garden, 1885.

Professor Remington is a very well known man, whose great success as a teacher and as a pharmaceutical editor of the United States Dispensatory has given him a position second to no one in pharmacy in the United States, and, indeed, we may say, in the world. When, therefore, it was rumored that he was preparing a general work upon pharmacy, to fill the general vacancy left by the decrepit state into which Parrish's Pharmacy had fallen by old age, much was hoped for, and an examination of the volume before us indicates that the fruition has justified the hope. If there be any fault in the book, it is simply that of overfulness. The physician who writes his own prescriptions has very little need for a general treatise on pharmacy, but to him who lives in the country, and has the time and desire necessary for even the pretence of elegance in pharmacy, this work will prove invaluable. It is composed of nearly one thousand pages of clear type, with a free use of the smaller type. We note the facsimiles of prescriptions given on page 921 as being of such a nature that we thank Providence that it is not our lot to be an apothecary and to decipher them. If the choice were allowed, we would prefer working out Egyptian hieroglyphics.

As the volume of Professor Remington is pharmaceutical rather than medical, it is hardly our province to review it in detail. It is sufficient to indicate to our readers that it embodies all that is known upon the subject of which it treats, and to recommend it most highly to any one desirous of possessing such a treatise. We congratulate Professor Remington upon the completion of his years of labor, and express the firm belief that he will reap the reward of a large and persistent sale.

REVUE SCIENTIFIQUE.

The following is a summary of the table of contents of the *Revue Scientifique* for the past month:

November 28, 1885:

*Physiology.*—Cerebral Excitability after Death. By M. Laborde.

*History of the Sciences.*—Van Helmont. By M. Laboulbène.

*Miscellany.*—Posthumous Memoirs of Pirogoff.

*Aeronautics.*—New Experiments with a Dirigeable Aerostat. By M. Renard.

*Book Notices.*—History of the Heavens (by M. Ball); German Psychology (M. Ribot).

*Proceedings of the Academy of Sciences of Paris.*

*Correspondence.*

December 5, 1885:

*The Death of M. Bouley.*

*Anthropology.* Prehistoric Life. By M. Letourneau.

*Terrestrial Physics.* The Climate of Alsace. By M. Grad.

*Psychology.*—Manifestations of Intelligence in a Bird. By M. de Lacaze-Duthiers.

*Physiology.*—The Thermic Sense. By M. Herzen.

*Book Notices.*—Clinical Studies on Hysteria (Richer); The Pathogenic Microbes (M. Artigalas); Cholera and Ferran (M. Duhourcau); The Great Sympathetic in Disease (M. Long-Fox).

*Proceedings of the Academy of Sciences of Paris.*

*Correspondence and New Inventions.*

December 12, 1885:

*Biology.*—Acclimatization and Europeans in the Colonies. By M. Virchow.

*Hygiene.*—Hygienic Improvements in Paris. By M. Hericourt.

*Geography.*—The Exploration of Me-Kong. By M. Réveilliére.

*Astronomy.*—The Fall of Stars on November 27, 1865. By M. Barré.

*Book Notices.*—The Equality of the Human Races. By M. Firmin.

*Proceedings of the Academy of Sciences of Paris.*

*Correspondence.*

December 19, 1885:

*Chemistry.*—Matter, Forces, and Affinity. By Armand Gautier.

*Anthropology.*—The Anthropological Congress at Carlsruhe.

*Miscellany.*—Public Instruction in Tunis. By M. Fontin.

*Geology.*—The Geysers in America and Iceland. By M. Leclercq.

*Book Notices.*—Lectures on the History of Medicine (M. Thomas); Railroad Transport of Wounded (M. Redard).

*Proceedings of the Academy of Sciences of Paris.*

*Correspondence.*

## Correspondence.

BERLIN.

(From our Special Correspondent.)

*THE USE OF THE COLD COMPRESS—INFANT FEEDING-BOTTLES—THE BACILLI OF SYPHILIS—GERMAN METHODS OF TEACHING MEDICINE—COMPULSORY VACCINATION—NOTES—TREATMENT OF ECZEMA.*

Among the therapeutic measures in vogue in Germany there is none which attracts the attention of the American physicians so eminently as the water-compress. It is no fable that the "compress," as it is briefly called, is prescribed for every affection of the throat and lungs; for a clinical experience of nearly three months in the Charité and other hospitals convinced your correspondent that it is the first thing ordered in nearly every ailment of the respiratory tract. A piece of linen, being of the size of a napkin if intended for the throat, or of the size of a towel if intended for the lungs, is dipped into cold—not lukewarm—water, applied to the desired locality, and retained *in situ* by means of a woollen shawl or oil-silk, and renewed every half-hour. A poultice is never exhibited for these affections. The compress, as may be expected, has also become the routine treatment in every household, and is quite familiar to every mother and nurse. Your correspondent has taken especial pains in tracing the therapeutic results of this procedure—which, of course, is often accompanied by medicinal treatment—and feels highly gratified with the results observed. The value of this hydriatic procedure consists in the frequent renewals and prolonged application—extending often over two to three days—of a medium which not only abstracts the surplus of heat in the part, and by its secondary physiological action dilates the vessels of the integument, and thus relieves the engorged internal parts, but which also has an undeniable invigorating influence on the nervous system. It seems superfluous to add that strict individualization is—as in all hydriatic procedures—an indispensable requisite in the application of the cold compress. If in a patient the nervous energy is profoundly lowered, the application of cold would naturally only deepen the existing prostration and lessen the resistance against the disease. If, however, we deal simply with a loss of innervation, the usual incumbent of nearly every affection, the application of cold would prove a powerful stimulant to the nerve-centres, and alongside of the above-mentioned local effects of the application, materially fortify the chances of recovery.

The old maxim that the treatment of an affection is in most instances an easy matter, provided a correct diagnosis has been established and the etiological factors are well understood, is strikingly illustrated by the digestive disorders of children that can be directly traced to the numerous existing patent nursing-bottles. In the children's department at the University Hospital of Berlin there is a collection of some three hundred nursing-bottles of various sizes and shapes, all provided with a long rubber tube, which enclose a piece of litmus-paper colored red. No commentary is needed. It is quite clear that the presence of lactic acid in the tube suffices to explain many obscure disorders of the alimentary tract for which the physicians are often at a loss to find a satisfactory explanation. Your correspondent has repeatedly witnessed that mothers returned to the Polyclinic and testified to the rapid recovery of their children after withdrawal of the patent nursing-bottles. In one instance the tube was found to be made of lead, and to have given rise to serious constitutional symptoms in addition to the gastric irritation. In view of these facts the attending physicians of the Polyclinic make it an invariable rule to inquire as to the nature of

the nursing-bottle in every child presented for treatment on account of digestive disorders.

In a lecture on bacteriology, held in the Hygienic Institute on the 9th of December, Prof. Koch denied that Lustgarten's syphilis-bacilli could at the present state of affairs be regarded as fully diagnostic and pathognomic, as the microbes detected in the smegma of the prepuce showed the same appearance and behavior as to coloration and general chemical tests. It is fair to add, however, Koch said, that Dutrelepont had recently endeavored to show that by a complicated coloration process the smegma-bacilli presented a definite difference of behavior from that of the syphilitic parasites detected in various parenchymatous tissues. But as long as Dutrelepont's claims lack a firm substantiation, Lustgarten's bacilli can, according to Koch's views, not yet be invested with an absolute diagnostic character. In the course of the same lecture Koch also referred to the singular and still unexplained identity of the bacilli of tuberculosis and leprosy.

There is an essential difference in the method of teaching the practice of medicine between Germany and America. All the lectures on practice of medicine are delivered in the hospital amphitheatres alongside of the patient, who serves as the illustration of the subject of the discourse. One student is called up by the professor to act as "practicant," to interrogate the patient, to diagnose the case, and to suggest the appropriate treatment. After that the professor delivers his lecture with especial reference to the peculiarities of the case present. It is evident that the impression produced by these practical and demonstrative lectures is far greater than that of mere didactic teaching, such as forms still the main source of instruction for many American students.

The question whether or not vaccination should be enforced as an obligatory measure is at present receiving in Germany an unusual attention. The appearance of an epidemic, marked by an erysipelatous rash and constitutional disturbance, on the island of Rügen (in the Baltic Sea), which is charged directly to vaccination, has naturally confirmed the claims of the opponents of this procedure, to abolish, at least, compulsion in the matter. While the fairness of this demand cannot be questioned, the German government is little disposed to comply with it in view of the remarkable results which vaccination has furnished in the army according to thoroughly reliable statistics. The following interesting data on the value of vaccination, given by Prof. Koch in his opening lecture on hygiene, must be regarded as a powerful argument in favor of compulsory vaccination. Before the introduction of vaccination, Koch said, smallpox was a disease which, like measles at present, attacked nearly everybody and killed about one-twelfth of the human race. In Sweden, where we find reliable statistics even from the last century, according to the records eighty thousand people died annually of smallpox, while the number of deaths from this cause, after introduction of compulsory vaccination, amounts only to eight hundred to one thousand. In other words, seventy-nine thousand people are being saved annually in that country by vaccination. It would be a hard matter to overthrow so forcible an argument as is contained in these figures, provided they should be reliable. In the latest annual issue of the Imperial Health Office Reports, however, we find the following affections figuring as alleged sequelæ of vaccination, which might well deter a timid mater familias from exposing her child to the possible dangers lurking in vaccination:

1. Inflammation of the skin.
2. Inflammation of the lymphatic vessels and glands.
3. Inflammation and suppuration of the cellular tissue, five cases with a fatal issue.
4. Erysipelas, nine deaths.
5. Ulcerations and two deaths (from septicæmia).
6. Acute and chronic skin-eruptions.

A transmission of syphilis has in no instance been observed.

That learning and humanity do not necessarily go hand in hand has been very clearly shown by the practice and decisions of the military school at Spandau (near Berlin). To ascertain the penetrating power of a certain new shot, living horses, which were previously chloroformed, were fired upon. It is hard to recall, of all inhuman and brutal acts on record in the world's history, an act more revolting and disgraceful than this practice ordered by the Secretary of War of a nation claiming to be the most educated of all. From a medical point of view we fail to see what possible benefit in this especial instance chloroform could produce. Why not use cadavers, which would, in every imaginable respect, have answered the same purpose?

There is a still more ignominious issue connected with this affair. When Dr. Foerster, president of the Berlin Society for the Prevention of Cruelty to Animals, petitioned the

Secretary of War to inhibit this inhuman practice on the most noble and useful of animals, the wise and just secretary ordered Dr. Foerster to be indicted for gravely insulting the authorities of the military college. In spite of Dr. Foerster's plea that he was led to his petition by mere motives of humanity, he was sentenced to pay a fine of one hundred marks, which sum was afterwards reduced to thirty-five marks.

The catalogue of the Berlin University just issued contains among the number of attending students—over six thousand five hundred—the names of one hundred and twenty-five Americans who have duly matriculated. The chief attractions for the American student or physician (for they all have obtained their degree at home) are the clinics of Schröder and Gusserow in gynæcology, Bardeleben and Bergmann in surgery, Henoch in pædiatrics, and the laboratories of Koch and Virchow.

The concentration of the first authorities of Germany at the Berlin University has made Berlin unquestionably the greatest medical centre of the continent, a rank which a few years ago was claimed by Vienna. The American student is allowed to matriculate on the strength of his passport, without being compelled to present any college degree, while for every German the graduation-papers from a gymnasium—a classical high school, with a nine years' course—are a *conditio sine quâ non.* These requisites insure a uniform and high literary level, which differs very favorably from the mixed status still to be found in some of our American colleges. Though, according to American views, Latin and Greek are not indispensable requisites to the study and practice of medicine, we must admit that it is desirable to raise the standard of the profession at home to a higher level than it occupies at the present day. Of this one grows especially conscious after having met the English and German colleagues. There is no doubt, however, that probably in the near future the American physician will, in all respects, be the peer of his European *confrères.*

The pustulous eczema appearing on the head, face, and eyelids, which so often leads to irreparable injury to the conjunctiva and cornea, is treated by Burkhardt, in the Berlin Charité, in the following manner: After a careful softening of the part, and dissolving of the crusts, the part is brushed with a three per cent. solution of nitrate of silver. This application is made at first daily, later only every second day, until healing sets in. Immediately after cauterization the application of the following ointment materially assists the healing process:

℞ Flor. zinci, 2 parts;
Olei cad., 1 part;
Vasel., 10 parts.

Burkhardt's treatment has proven a success in a very large number of cases.

A papilloma of the upper surface of the tongue, of the size of a three-cent piece, appearing in a young child, was treated by Dr. Schwecten, in the Charité, by the solid silver stick and immediate application of a saturated chloride of sodium solution. This simple procedure was so successful that the tumor disappeared wholly in about a week's time.

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### *THE CHLOROFORM TREATMENT OF TAPEWORM.*

Editors of the THERAPEUTIC GAZETTE:

I have the honor of being a subscriber and interested reader of your journal, and on pages 759 and 784 of No. 11, issued November 16, 1885, I read two articles on the use of chloroform in the treatment of tapeworm; the former, by Dr. Bennett, of Brooklyn, simply stating his success in the employment of the remedy, and the latter, by Dr. Sampson Pope, of South Carolina, claiming credit of the discovery for Dr. Simonds, of Texas.

While I do not for a moment doubt Dr. Pope's assertion, I simply wish space in your valuable journal to give due credit to another very worthy member of our noble profession.

To my knowledge, Dr. F. G. Horn, of Colorado Springs, Col., used chloroform in the treatment of tapeworm in 1872, and, meeting with decided success, he continues its use.

Very respectfully,
C. A. SIGLER, M.D.

EL DORADO, KANSAS.

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### *NOTES ON COCAINE.*

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—I wish to add a mite to the records of cocaine hydrochlorate. Appreciating that the notes on cocaine have already become very voluminous, I will be as brief as possible, and beg your indulgence, on the ground that in a multiplicity of evidence must the merits of this local anæsthetic gain a lasting foothold. It to the ophthalmologist is a *sine quâ non,*—the anæsthetic *par excellence.* Among my most recent cases was a case of

strabismus convergens alternans. Young lady aged 23 years; operated upon both eyes at one sitting. Used in all 20 drops of eight per cent. solution, and waited half an hour from time of first instillation before commencing the operation. Used a drop or so about every five minutes. The operation was nearly bloodless and painless, and she scarcely felt the strabismus-hooks. Found also that the greatest point achieved, aside from the complete anæsthesia of the balls, was that the eyes could be immediately tried as to the power of convergence, and if any defects were observed the hooks could be again passed, and the remaining portions of tendinous attachments severed. This cannot be done where chloroform or ether is used, and maybe the surgeon's reputation greatly imperilled, and his fee withheld, and he so compromised that maybe the patient would not again submit to an operation. With cocaine all this is avoided. I have also found cocaine indispensable in tattooing corneal leucoma for cosmetic effects, and for the removal of foreign substances imbedded in the cornea. I have used it repeatedly, and have never been disappointed in its action.

Among the most important cases was one recently of acute glaucoma of left eye. Eye perfectly blind, painful, pupil dilated, and all the other usual symptoms. First instilled strong sol. eserine sulphuric; then at intermissions of some five minutes for half an hour instilled a drop of an eight per cent. solution of cocaine hydrochlorate, and proceeded with the iridectomy, which proved nearly painless, and the eye made a complete and rapid recovery, s = $\frac{2}{20}$.

Used cocaine again in the removal of a very large pterygium complicated with symblepharon and dense corneal opacity. The operation was nearly bloodless and painless, and after the dissection the surface was cleansed carefully and dried, and cocaine again applied, and the ocular conjunctiva dissected up from near two-thirds from above and below, and the exposed surface covered. The sutures held nicely, and the eye has made a handsome recovery, with scarcely any reaction after the operation.

Operated one week ago to-day upon the eyes of a young girl aged 13 years. Case of acute glaucoma, both eyes, caused from congenital ectopia lentis, both eyes. Right dislocated downwards and inwards, and left lens into anterior chambers. In this case used chloroform by inhalation, and also cocaine locally, and eserine. Cocaine was used for a double purpose,—first, to prevent vomiting from any relaxation, and also that in case the chloroform-anæsthesia should chance to fail at the critical moment we could go on and finish the operation without pain to the patient; and such an emergency did partially happen when we came to the operation upon the left eye; but the cocaine did its work, and we had as much time as could be desired. In the right eye we have a handsome iridectomy, and the eye healed quickly, and without any reaction; and sight is good, as the lens was clear; but in the left eye the lens was tough and amber-colored, and bound down tightly by adhesions to the iris, which (the latter) was found to be a hard sclerosed ring; and we could not remove the lens, but proceeded by division, and bound up the eye, and expected rapid setting in of post-ophthalmitis; but nothing much unusual has happened; and while in this eye we do not expect any sight, yet we will have a fair-looking eye. The notes on this case as here given are very incomplete, and we wish to report it very fully in some ophthalmic journal, for it has proved one of rare interest to all interested.

C. A. LAMBERT, M.D.

GOSHEN, IND., December 15, 1885.

## Notes and Queries.

### *DISINFECTANTS.*

The following are the conclusions drawn from the reports of the Committee on Disinfectants of the American Public Health Association:

The most useful agents for the destruction of spore-containing infectious materials are:

1. Fire. Complete destruction by burning.
2. Steam under pressure. 110° C. (230° F.) for ten minutes.
3. Boiling in water for one hour.*
4. Chloride of lime.† A four per cent. solution.
5. Mercuric chloride. A solution of 1 to 500.

For the destruction of infectious material which owes its infecting power to the presence of micro-organisms not containing spores, the Committee recommended:

* This temperature does not destroy the spores of *B. subtilis* in the time mentioned, but is effective for the destruction of the spores of the anthrax bacillus and of all known pathogenic organisms.

† Should contain at least twenty-five per cent. of available chlorine.

1. Fire. Complete destruction by burning.
2. Boiling in water half an hour.
3. Dry heat. 110° C. (230° F.) for two hours.
4. Chloride of lime.* One to four per cent. solution.
5. Solution of chlorinated soda.† Five to twenty per cent. solution.
6. Mercuric chloride. A solution of 1 to 1000 to 1 to 4000.
7. Sulphur dioxide. Exposure for twelve hours to an atmosphere containing at least four volumes per cent. of this gas, preferably in presence of moisture.‡
8. Carbolic acid. Two to five per cent. solution.
9. Sulphate of copper. Two to five per cent. solution.
10. Chloride of zinc. Four to ten per cent. solution.

The Committee would make the following recommendations with reference to the practical application of these agents for disinfecting purposes:

*For Excreta.*

(*a*) In the sick-room:

For spore-containing material:

1. Chloride of lime in solution, four per cent.
2. Mercuric chloride in solution, 1 to 500.§

In the absence of spores:

3. Carbolic acid in solution, five per cent.
4. Sulphate of copper in solution, five per cent.
5. Chloride of zinc in solution, ten per cent.

(*b*) In privy-vaults:

Mercuric chloride in solution, 1 to 500.‖

(*c*) For the disinfection and deodorization of the surface of masses of organic material in privy vaults, etc.:

Chloride of lime in powder.‡

*For Clothing, Bedding, etc.*

(*a*) Soiled underclothing, bed-linen, etc.:

1. Destruction by fire, if of little value.
2. Boiling for at least half an hour.
3. Immersion in a solution of mercuric chloride of the strength of 1 to 2000 for four hours.§
4. Immersion in a two per cent. solution of carbolic acid for four hours.

(*b*) Outer garments of wool or silk, and similar articles, which would be injured by immersion in boiling water or in a disinfecting solution:

1. Exposure to dry heat at a temperature of 110° C. (230° F.) for two hours.
2. Fumigation with sulphurous acid gas for at least twelve hours, the clothing being freely exposed, and the gas present in the disinfection-chamber in the proportion of four volumes per cent.

(*c*) Mattresses and blankets soiled by the discharges of the sick:

1. Destruction by fire.
2. Exposure to superheated steam—twenty-five pounds pressure—for one hour. (Mattresses to have the cover removed or freely opened.)
3. Immersion in boiling water for one hour.
4. Immersion in the blue solution (mercuric chloride and sulphate of copper), two fluid-ounces to the gallon of water.¶

*For Furniture and Articles of Wood, Leather, and Porcelain.***

Washing, several times repeated, with,—

1. Solution of mercuric chloride, 1 to 1000. (The blue solution, four ounces to the gallon of water, may be used.)
2. Solution of chloride of lime, one per cent.
3. Solution of carbolic acid, two per cent.

*For the Person.*

The hands and general surface of the body of attendants, of the sick, and of convalescents at the time of their discharge from hospital:

1. Solution of chlorinated soda diluted with nine parts of water (1 to 10).
2. Carbolic acid, two per cent. solution
3. Mercuric chloride, 1 to 1000; recommended only for the hands, or for washing

* Should contain at least three per cent. of available chlorine.

† This will require the combustion of between three and four pounds of sulphur for every thousand cubic feet of air-space.

‡ The addition of an equal quantity of potassium permanganate as a deodorant, and to give color to the solution, is to be recommended (*Standard Solution No. 2*).

§ A concentrated solution containing four ounces of mercuric chloride and one pound of cupric sulphate to the gallon of water is recommended as *Standard Solution No. 3*. Eight ounces of this solution to the gallon of water will give a dilute solution for the disinfection of excreta, containing about 1 to 500 of mercuric chloride, and 1 to 125 of cupric sulphate.

‖ For this purpose the chloride of lime may be diluted with plaster of Paris, or with clean, well-dried sand, in the proportion of one part to nine.

¶ The blue solution containing sulphate of copper, diluted by adding two ounces of the concentrated solution to a gallon of water, may be used for this purpose.

** For articles of metal, use Solution No. 3.

away infectious material from a limited area, not as a bath for the entire surface of the body.

*For the Dead.*

Envelop the body in a sheet thoroughly saturated with,—

1. Chloride of lime in solution, four per cent.

2. Mercuric chloride in solution, 1 to 500.

3. Carbolic acid in solution, five per cent.

*For the Sick-Room and Hospital Wards.*

(*a*) While occupied, wash all surfaces with,—

1. Mercuric chloride in solution, 1 to 1000 (the blue solution containing sulphate of copper may be used).

2. Chloride of lime in solution, one per cent.

3. Carbolic acid in solution, two per cent.

(*b*) When vacated:

Fumigate with sulphur dioxide for twelve hours, burning three pounds of sulphur for every thousand cubic feet of air-space in the room; then wash all surfaces with one of the above-mentioned disinfecting solutions, and afterwards with soap and hot water; finally throw open doors and windows and ventilate freely.

*For Merchandise and the Mails.**

The disinfection of merchandise and of the mails will only be required under exceptional circumstances; free aeration will usually be sufficient. If disinfection seems necessary, fumigation with sulphur dioxide, as recommended for woollen clothing, etc., will be the only practicable method of accomplishing it.

*For Rags.*

(*a*) Rags which have been used for wiping away infectious discharges should at once be burned.

(*b*) Rags collected for paper-makers during the prevalence of an epidemic should be disinfected before they are compressed in bales by,—

1. Exposure to superheated steam (twenty-five pounds pressure) for ten minutes.

2. Immersion in boiling water for half an hour.

(*c*) Rags in bales can only be disinfected by injecting superheated steam (fifty pounds pressure) into the interior of the bale. The apparatus used must insure the penetration of the steam to every portion of the bale.

* In order to secure penetration of the envelope by the sulphur dioxide, all mail matter should be perforated by a cutting-stamp before fumigating.

*For Ships.*

(*a*) Infected ships at sea should be washed in every accessible place, and especially the localities occupied by the sick, with,—

1. Solution of mercuric chloride, 1 to 100 (the blue solution heretofore recommended may be used).

2. Solution of chloride of lime, one per cent.

3. Solution of carbolic acid, two per cent.

The bilge should be disinfected by the *liberal* use of a strong solution of mercuric chloride (the concentrated solution—"blue solution"—of this salt with cupric sulphate may be used).

(*b*) Upon arrival at a quarantine station an infected ship should at once be fumigated with sulphurous acid gas, using three pounds of sulphur to every thousand cubic feet of air-space; the cargo should then be discharged on lighters; a liberal supply of the concentrated solution of mercuric chloride (four ounces to the gallon) should be thrown into the bilge, and at the end of twenty-four hours the bilge-water should be pumped out and replaced with *pure* sea-water; this should be repeated. A second fumigation after the removal of the cargo is to be recommended; all accessible surfaces should be washed with one of the disinfecting solutions heretofore recommended, and subsequently with soap and hot water.

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## *INJECTION OF A NEW PREPARATION OF ALBUMINATE OF MERCURY IN SYPHILIS.*

Dr. Max Bockhart, of Wiesbaden, describes, in a German dermatological journal, an ingenious method of administering mercury in syphilitic cases by subcutaneous injection, which, he says, is perfectly innocuous, never having caused pain, induration, or abscess. He combines the mercury with blood-serum. The latter, which may be obtained from the horse, sheep, or ox, is sterilized according to Koch's process, and then filtered. Of the filtrate, 40 cubic centimetres (1⅓ oz.) is poured into a graduated glass. To this is added a warm (50° Cent.) solution of 3 grm. (45 grs.) of bichloride of mercury in 30 grammes (1 oz.) of water. The resulting precipitate is dissolved in a solution of 7 grm. (105 grs.) of common salt in 20 grammes (5 drachms) of water. This gives a three per cent. solution of mercury blood-serum. This is then mixed with distilled water, so that the whole weighs 200 grammes (6¼ oz.), which

reduces the strength to one and a half per cent., which is the best strength for use; a gramme (15 grs.) of it containing 0.015 gramme (¼ gr.) of mercurial albuminate. This solution is a yellowish opalescent liquid, with neutral reaction, and will keep very well in a dark glass bottle in a cool place. The injections are given once or twice a day, 0.7 gramme (12 gtt.) being introduced on each occasion, containing about 0.01 gramme, or $\frac{5}{210}$ of a grain of albuminate of mercury. Besides acting rapidly and powerfully on syphilis, and keeping the system for a long period free from secondary symptoms, this preparation has the advantage of being stable, cheap, and easily prepared.—*British Med. Journ.*, October 10, 1885.

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*COCAINE IN SEA-SICKNESS.*

Dr. J. B. Bissell writes to the *Medical Record*, December 19, 1885, as follows: "Cocaine has been recently recommended as a remedy in sea-sickness, particularly by a Russian physician, who claims to obtain speedy and certain relief by its use in this affection. In a voyage from New York to Charleston, S. C., made in November of this year, an excellent opportunity was afforded to ascertain the value of the drug in this regard. The time of passage was four days, the weather fair, and no storms, but a head-wind lasted all the way. The experiments were made on twenty-seven persons of both sexes, and from 4 years of age to 48. The hydrochlorate of cocaine, in doses of $\frac{1}{210}$ and $\frac{1}{215}$ of a grain, in tablets, was given by mouth. In one set of cases the medicine was begun soon after leaving the wharf; in another set at the first symptom of nausea; in the third set not till vomiting had taken place. In the first set the dose was $\frac{1}{210}$ of a grain, repeated every hour till 2 grains had been taken. In the other cases $\frac{1}{215}$ every fifteen minutes up to 2 grains, or, as happened in nearly every case, till the patients became so sick that they refused to continue the drug. This was usually after the fifth or six dose. The results from these three sets of cases were almost precisely similar. In twelve cases there was no improvement, if the treatment did not positively make the patients worse. In six cases there was certainly an increase in the severity of the symptoms. In only three of the twenty-seven cases was there apparent benefit, and this improvement was coincident with a temporary improvement of the weather. As the sea became rougher all three relapsed, and, in spite of the cocaine, became very sick. The other six of the twenty-seven were at sea for the first time. One of these was not sick at all during the trip. The others, however, did not escape. I did not notice any special influence exerted by the age or sex of the person treated. Such results as the above ought to dispose of cocaine as a remedy in sea-sickness, but as these results do not advertise any one's special method of administering the drug, or any firm's special preparation, it is very likely it will continue to be used till a newer remedy comes into fashion."

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*ON THE INFLUENCE OF VASELINE ON DIGESTION.*

Vaseline is at present so frequently employed for pastry and other eatables instead of butter and fat, that the question whether or not this substance exerts an objectionable influence on the digestive system is worthy of attention.

In the meeting of the Biological Society of Paris, held on the 14th of November, 1885, Dr. Dubois discussed this subject, and presented the results of his researches (vide *Gazette Hebdomadaire* of November 27, 1885).

The most instructive of his experiments instituted for this purpose were those of two dogs, who ingested for a period of six consecutive days 25 and 15 grm. (375 and 275 grs.) daily without experiencing any appreciable disturbance of the digestive apparatus. These quantities correspond to about 100 to 60 grm. in man, taking weight as the criterion. Dubois states that, against all anticipation, vaseline is not ill borne by the stomach; although, as a carbohydrate, it would be *a priori* regarded as an impediment to the digestive functions.

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*THE GELSEMIUM HABIT.*

Dr. H. C. Caldwell reports in the *Med. and Surg. Herald*, October, 1885, the peculiar case of a man who became addicted to the use of gelsemium. In an attack of rheumatism he took large doses of the fluid extract of gelsemium, which was followed by relief, and the next day was repeated under similar circumstances with the same result. Using it for some time in this way he became addicted to the habit, and finally used as much as a fluidounce of the extract at one dose. He became pale, emaciated, restless, and uneasy, and was a subject of hallucination. This

condition continued to increase until he became finally almost idiotic, and the dose being daily increased, until after a year he sank into a condition of hopeless idiocy, and died in a stupor induced by this drug.

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### *COLD BANDAGING OF THE LEG IN INSOMNIA.*

DR. VON GELLHORN has found the following plan very useful in inducing sleep in persons who suffer from insomnia. A piece of calico, about eighteen inches wide and two and three-quarter yards long, is rolled up like a bandage, and a third of it wrung out of cold water. The leg is then bandaged with this, the wet portions being carefully covered by several layers of the dry part, as well as by a layer of gutta-percha tissue, and a stocking drawn on over the whole. This causes dilatation of the vessels of the leg, thus diminishing the blood in the head and producing sleep. It has been found by Winternitz that the temperature in the external auditory meatus begins to fall a quarter of an hour after the application of the bandage; the decrease amounting to 0.4° Cent., and the normal not being again reached for from one and a half to two hours afterwards. The author has employed this means of procuring sleep for a couple of years, and finds it especially useful in cases where there is congestion of the cerebral vessels. Sometimes he has found it necessary to reapply the bandage every three or four hours, as it dried.—*British Med. Journ.*, November 7, 1885.

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### *THE INCOMPATIBILITY OF ANTIPYRIN WITH SWEET SPIRITS OF NITRE.*

We have already referred, in a previous issue, to the fact that when antipyrin in aqueous solution is added to sweet spirits of nitre a deep green color is gradually assumed, and after standing several hours beautiful green crystals are deposited. This reaction has been investigated by MR. JAMES KENNEDY (*Pharm. Record*, December 15, 1885), who found that when antipyrin was dissolved in ethyl nitrite or amyl nitrite the solution always deposited it in crystalline form on standing for some hours. When antipyrin is mixed with a solution of potassium nitrite the solution immediately assumes a green color, but does not deposit the green crystals.

After making some further experiments, he concluded that the formation of the new compound was due to the combination of the acid or nitrous radical with antipyrin, and proved the correctness of his theory by obtaining the compound from aqueous solution of antipyrin by saturating it with ($N_2O_2$) or (NO) gas (generated by action of $HNO_3$ on Cu), the compound being but very sparingly soluble in water crystallized out.

It crystallizes in minute tabular crystals having a beautiful green color.

It is an acid, and has the property of reddening litmus-paper, and combines with alkalies, but is precipitated from its combination on addition of HCl.

It is sparingly soluble in cold water, but is entirely dissolved by boiling water (being again deposited on cooling).

It is soluble in ether, alcohol, and benzol, but is insoluble in chloroform.

He also mentions another peculiar compound which it is capable of forming:

When antipyrin is treated with Nessler's reagent in excess the mixture become turbid, and in a few moments separates into two distinct layers. The lower layer is of a pale yellow color and has an oily appearance, and is a compound of antipyrin with iodide of mercury. It is decomposed by addition of water in excess with separation of yellow or proto-iodide of mercury.

Antipyrin is a very soluble substance, dissolving readily in all ordinary solvents. Its aqueous solution is not precipitated by the hydroxides of potassium, sodium, or ammonium, but gives precipitates with mercuric chloride, tannic acid, and iodine. It is *not* precipitated by soluble iodides. When gently heated it melts to a colorless liquid, and solidifies to a crystalline mass on cooling. Exposed to higher heat it sublimes with partial decomposition. The vapors are inflammable.

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### *THE ACTION OF ALKALIES ON ALOES.*

It is well known that the addition of bicarbonate of sodium or potassium to solutions of aloes considerably diminishes their bitterness, and DR. MACDONALD (*Moniteur de la Pharmacie*, November, 1885) has attempted to determine whether or not this addition to aloes at the same time diminishes their medical properties. A proportion of forty parts of aloes, seventy-five of bicarbonate of sodium, to a thousand of water, was divided into two parts; the one was carefully sealed, the other remained exposed to the air. Two months later the latter portion had entirely lost its bitterness, while in the first it was completely preserved. Therapeutic experiments made with these two proportions show that both

had still very active properties, but that the bitter solution was at least three times as active as the other.

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### *CASE OF POISONING BY NITRATE OF POTASSIUM.*

In the course of an exceedingly interesting article, Dr. Littlejohn gives an account of a fatal case of poisoning with nitrate of potassium, supposed to be the only recorded case of criminal administration of nitre (*Pharmaceutical Journal and Transactions*, November 21, 1885).

The victim was a boy of 3, the son of a single woman. The boy was robust, and when he left the house with his mother at 5.35 on a Friday afternoon he was in his usual good health. When he returned at six o'clock he was cold, sick, and vomiting. Afterwards he vomited repeatedly and was violently purged. The mother refused to call medical assistance, and the boy died at 8 P.M. Dr. Littlejohn having been asked for a medical certificate, the inquiries which he made raised his suspicions, and he thought it right to inform the police authorities of the case. A post-mortem examination was accordingly ordered, and on examining the stomach Dr. Littlejohn's suspicions were confirmed. He says, "I shall never forget the striking appearance of vivid congestion which it presented as contrasted with the generally normal condition of the rest of the body."

An order for analysis was intrusted to Prof. Maclagan and Dr. Littlejohn. Search was made for the metallic irritant poisons, but without success; neither arsenic, mercury, zinc, nor oxalic acid was present. Subsequently Dr. Littlejohn learnt that on the toe of one of the child's boots there was the appearance of some minute crystals. On examination with a lens these proved to be prismatic and fluted, and Prof. Maclagan pronounced them to be nitre. The brucine test was applied, and the characteristic vivid red reaction obtained. "No time was lost in completing the analysis, and as the result nitre was detected in the mucous lining, the stomach, and the intestines, in the liver, lung, kidney, brain, and in the blood. From the stomach it was separated in the crystalline form; in the other organs the reactions with brucine and iron were well marked. In the brain and blood the iron test was not decisive, but the brucine test showed the presence of nitre very distinctly." The poison was also found on various articles of clothing worn by the child before death. The mother had cleared away all discharges which passed from it, but on two pieces of cloth which were stained with fæcal matter nitre was found. Prof. Maclagan and Dr. Littlejohn reported "that from our whole experiments we can come to no other conclusion than that this child must have swallowed a very large dose of nitre, which had not only impregnated the blood and all the organs, but had been discharged in considerable quantity in the matters vomited and passed by stool."

As to the purchase of the poison, a grocer stated that he recollected selling the woman a small packet of nitre, but he failed to identify her in a proper manner. Other important links in the chain of evidence being wanting, the jury returned a verdict of "not proven."

In concluding the paper Dr. Littlejohn remarks, "The taste and rapidity of its action are naturally serious obstacles to the use of nitre by the poisoner, and, as the present case shows, children are the most likely victims. The wonder is that with the unusual facilities for the purchase of such an active poison we do not hear of nitre being more frequently employed."

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### *ARTIFICIAL COCAINE.*

Merk succeeded in transforming benzoyl-ecgonin, a new substance discovered by him, into cocaine, as reported by the *Pharm. Zeitung* of October 31, 1885. It might interest some of the more speculative minds to know how to prepare the costly alkaloid without the Peruvian plant.

Several grammes of benzoyl-ecgonin are heated to 100° (C.) with iodide of methyl and methylic alcohol, and then slowly evaporated. The product is a hydrate of iodine, and conforms to all tests of genuine cocaine, and even has the same melting-point as the latter (98°).

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### *AN IMPROVED METHOD OF OPERATING FOR CLEFT PALATE.*

A correspondent writes to *The Lancet*, November 7, 1885, concerning what he considers a great improvement in the operation for cleft palate. Hitherto great difficulty and not a little danger have arisen from hemorrhage during the operation, necessitating frequent and very skilful assistance, periodical discontinuation of the anæsthetic, and distinct intervals in the performance of the operation. In addition to these, other and minor troubles are experienced. All these difficulties may be avoided, and the operation rendered perfectly

safe and easy, by the simple process of inversion as applied to the head only. This can easily be attained by bringing the patient's shoulders well up to the end of the operating-table, and allowing the head to hang over the edge in the fully extended position. In this position the roof of the mouth would be horizontal or slightly inclined downward towards the operator, who should stand at the head of his patient. The anæsthetic is given through the nose by a small tube, and is quite out of the way of the surgeon. Only one assistant is required, who should stand to the left of the operator. In paring the edges no change of hands is required, but the corresponding hand should be used in elevating the tissues of the hard palate and in passing the sutures. Under these circumstances no blood can enter the larynx or œsophagus, the palate remains unobscured by blood, and whatever hemorrhage occurs finds its way into the nasal cavities, and at the conclusion of the operation may be emptied by simply turning the patient's head to one side.—*Medical Record*, December 5, 1885.

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### *THE TREATMENT OF DIABETES MELLITUS WITH BORACIC ACID.*

Mr. F. A. Monckton reports in the *Australasian Gazette* (October, 1885) a case of a boy, aged 14, suffering from diabetes mellitus, with all the symptoms in an aggravated form, who was apparently cured by the use of boracic acid in 7-grain doses three times daily. At first there were no stringent dietary regulations, and even in the later part of the treatment only sugar, potatoes, and oatmeal were forbidden. Bread was eaten at the meals in the ordinary way. He gradually gained in weight, his health improved, and the sugar disappeared from the urine.

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### *TREATMENT OF A REBELLIOUS CORN.*

Dr. R. C. Newton, Assistant Surgeon, U.S.A., writes to the *New York Medical Record*, November 7, 1885, from Fort Elliott, Texas, concerning a soldier, 33 years of age, who was suffering from a large callosity, caused by a splinter which he had run into the sole of his foot two years ago. The callosity resembled an ordinary corn, but was as large around as a quarter of a dollar, and gave but little pain except when the man walked about. The corn was vigorously treated by excision, poulticing, scraping, salicylic acid, cannabis indica, collodium, etc., but without avail, for each time that it was removed it grew again with most commendable persistency. Anti-syphilitic treatment was also tried without success. Finally Dr. Newton had resort to liquor potassæ, as recommended by Erichsen for callosities, and, after making applications twice a day with this substance for a period of four months, was rewarded by seeing his patient cured and returned to duty.

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### *THE EMPLOYMENT OF ANTIPYRIN IN THE TREATMENT OF EPISTAXIS.*

Dr. Lavrand (*Journ. de Méd.*, November, 1885) refers to two cases which seem to show that antipyrin possesses the power of arresting epistaxis. Dr. Lavrand used it in the form of a three per cent. solution. It is employed by soaking a morsel of cotton in this solution, and then introducing it into the nostril, which is then closed by making pressure with the finger over the compress.

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### *THE TREATMENT OF BURNS.*

Dr. Meurisse speaks very highly of goldbeaters' skin as an application to burns (*Medical Record*, December 5, 1885). He says that it never becomes adherent to the skin as other forms of dressing do, the pain and inflammation are much less marked, and the wounds heal much more rapidly. The goldbeaters' skin may be washed with cold water at each dressing, and can be used again and again. The liniment or other applications may be made directly to the skin and covered with the tissue. The same substance may be used in dressing blisters after the application of a vesicatory.

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### *THE TREATMENT OF RHUS TOXICODENDRON POISONING.*

Dr. Silas Hubbard reports in the *Peoria Monthly* for November that he has often obtained good results in the treatment of rhus toxicodendron poisoning by the application of a strong infusion of stramonium-leaves.

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### *OPIUM-POISONING THROUGH MOTHER'S MILK.*

Mr. William T. Evans reports in the *British Med. Jour.*, December 19, 1885, a case of a newly-born nursing infant which was fatally poisoned by opium given to the mother for after-pains.